CanadianSolar

Little Creek Solar Project

MODIFICATIONS DOCUMENT (REA # 3068-93AP8E)

NOVEMBER 2013

DILLON CONSULTING

Table of Contents

List of Appendices

1. Introduction

2243913 Ontario Corporation, as a general partner for and on behalf of Little Creek LP (a subsidiary of Canadian Solar Solutions Inc.) is developing an 8.5-megawatt (MW) solar photovoltaic project to be known as Little Creek Solar Project. The project has been approved to be located on approximately 32 hectares (80 acres) of land on Part of Lots 14 and 15, Concessions 4 and 5 in the former geographic Township of North Fredericksburg, in the Town of Greater Napanee, Ontario. For further clarity, the project is located on the south side of Little Creek Road, in the County of Lennox and Addington. A Renewable Energy Approval (REA) application was acknowledged as submitted to the Ontario Ministry of the Environment (MOE) on May 11, 2012 and was in accordance with the requirements of *Ontario Regulation 359/09*.[1]

On January 25, 2013, a REA was issued for the construction of the Little Creek Solar Project (REA Number 3068-93AP8E), which is outlined in **Appendix A**. On July 31, 2013, the MOE subsequently amended the REA to conform to the Minutes of Settlement dated March 26, 2013 (Environmental Review Tribunal File Nos.009/13-010/13-011). Since that time, HB White Construction Canada Corp. (White Construction) has completed detailed design of the solar facility. Together, Canadian Solar and White Construction have discovered some areas to increase technical efficiency that could only be identified during the detailed design phase of the project. Primarily, the availability of more efficient equipment that allows for the reduction of the number inverter locations has required a redesign of the overall layout of the project. As such, the proponent is proposing some technical changes to the preliminary design. Since the REA is based on the preliminary design, the proponent is seeking a technical change to the REA. This report outlines the proposed amendments and any potential impacts that may be anticipated to the natural environment and neighbouring landowners.

To avoid confusion, this report focuses on the final design as prepared by White Construction. To review the preliminary design and original REA submission made to the MOE, please visit: http://www.littlecreeksolar.com/.

[1] It should be noted that the Proposal to Engage for this project was issued prior to January 1, 2011, and as such, the proponent is permitted to continue under the 2009/2010 pre-submission rules. For clarity, this report has been prepared in accordance with the 2011 pre-submission rules and fulfills the requirements of *Ontario Regulation 359/09*, as amended on November 2, 2012.

2. Overview of the Minor Amendment

The basis for this technical change amendment is the availability of more efficient equipment that allows for the reduction of solar modules and inverter stations, resulting in a revised project layout that optimizes overall efficiency of the facility. Based on this, detailed engineering designs for the Little Creek Solar Farm have been undertaken and the proponent identified the need to amend the original REA. Through consultation with the MOE in October and November 2013, it is expected that the proposed modifications detailed within this report are insignificant in nature and represent a reduction in overall environmental effects of the project (see **Appendix B** for agency correspondence). As such, the proposed changes constitute a technical change amendment.

This Modifications Document focuses on the following proposed changes:

- Reduction in nameplate capacity from 10 MW AC to 8.5 MW AC;
- Change in inverter station model and location;
- Reduction in the number of inverter stations;
- Change in access road locations and reduction in road length and coverage;
- Change in solar panel model and energy output;
- Reduction in the number of solar panels;
- Change in substation model; and
- Reduction of the project area inside the perimeter fence.

3. Proponent Contact Information

Should there be any questions about the technical changes proposed for the Little Creek Solar Project please contact:

Full Name of Company:	*2243913 Ontario Corp.*
Address:	*545 Speedvale Avenue West, Guelph, ON. N1K 1E6*
Telephone:	*519-837-1881 ext. 2293*
Fax:	*519-837-2550*
Prime Contact:	*Grace Pasceri, Permitting Manager – Solar Farms*
Email:	*grace.pasceri@canadiansolar.com*

4. Project Size and Layout

The nameplate capacity of the project as outlined in the REA application has decreased from 10 MW alternating current (AC) to 8.5 MW AC. As a result of these changes, the project area within the fence line has been reduced slightly from approximately 32 hectares (80 acres) to approximately 28 hectares (70 acres). The internal access roads have been reconfigured to accommodate efficiencies in the design, and the total length of the access roads has been reduced from 4 km to 2 km. As outlined in the project comparison figure in **Appendix C**, the perimeter fence differs from what was presented in the preliminary design as the project area is reduced. All components in the final project area are within the original perimeter fence line that represented the project location boundary. A comparison of the preliminary design and final design layouts is provided in **Appendix C**.

4.1 Ministry of Natural Resources

Further consultation with the Ministry of Natural Resources was not warranted for the proposed technical changes. As the final design for the project does not exceed the original project location boundary, no amendments to the Natural Heritage Assessment are required. The Ministry of Natural Resources has been circulated as part of the stakeholder notification that there are proposed technical amendments proposed to this project. Any correspondence received in response from the Ministry of Natural Resources will be subsequently forwarded to the MOE.

4.2 Ministry of Tourism, Culture and Sport

This reduction in the project area does not require amendments to either the Cultural Heritage or Archaeological Assessments completed and reviewed by the Ministry of Tourism, Culture and Sport. The extent of the project location did not increase and the project area was studied and commented on in the original REA submission. The locations of the project components, installation methods or equipment specifications would not change the results or information presented related to cultural heritage or archaeological resources for this project. The Ministry of Tourism, Culture and Sport has been circulated as part of the stakeholder notification that there are proposed technical amendments proposed to this project. Any correspondence received in response from the Ministry of Tourism, Culture and Sport will be subsequently forwarded to the MOE.

5. Solar Panels

Following the reduction in MW AC, the module mix has been adjusted from 50,184 – 60 to 280 W modules to 3,744 – 290 W modules, 22,032 – 295 W modules, and 14,400 – 300 W modules (total of 40,176 modules). The proponent has also opted to use a CS6X 285/290/295/300 model, rather than a Trina TSM-PA05 model for the solar modules. The new modules are more efficient and as a result, fewer modules are needed than was indicated in the preliminary design. No negative environmental effects are anticipated as a result of the reduction in the number of solar modules.

6. Racking System

Due to the increased productivity of the facility's final design (discussed in **Section 4**), it is anticipated that fewer overall racks will be required. The dimensions of the racking as specified in the original REA submission remains unchanged, with a fixed design and an approximate height of 2.91 m. Any complaints or concerns submitted regarding the visual impacts of the racks will be documented by the proponent, and visual barriers will be installed and/or upgraded as necessary. No negative environmental effects are anticipated as a result of the reduction in the number of racks.

7. Inverter Stations

It has been decided that the SMA Sunny Central 800CP-CS inverter station will be used, rather than the SMA Sunny Central 500HE inverter station indicated in the *Design and Operations Report*. This change in inverter station model requires the following changes to the original REA submission:

- The nameplate capacity of the new inverter station is higher than was indicated in the *Design and Operations Report*;
- The total number of inverter stations has been reduced from 10 to 6;
- The locations of the inverter stations have changed; and,
- An updated *Noise Study Report* has been prepared. Further details regarding the *Noise Study Report* are in **Section 9.1** and the full revised report is in **Appendix G.**

The revised *Noise Study Report* concludes that this component can be installed and meet the noise standards of the Ministry of the Environment. To review details about the inverter station, please refer to the manufacturer's specification sheet in **Appendix E**. Please see **Appendix G** for a table with updated UTM coordinates of each inverter station. It is not anticipated that the change in the location of the inverter stations will affect project visibility from neighbouring residences or result in additional negative environmental effects.

8. Substation

In the original REA submission, the substation transformer manufacturer was not yet determined. For clarification, this Modifications Document includes the decision to use a substation transformer manufactured by Virginia Transformer Corporation. The transformer is a 7500/10000 MVA fluid-filled step-up transformer, which will use Envirotemp FR3 dielectric fluid. As specified in the REA approval, spill containment provisions will be provided at the substation transformer. Please refer to **Appendix F** for more detailed information on the substation. The location of the substation transformer has also changed slightly, with the substation being located approximately 50 m southeast of its original location. As indicated in **Section 9.1**, below, the movement of the substation transformer will not result in an exceedence of the 40 dBA requirement for noise, and the facility will remain in compliance with the MOE standards.

9. Supporting Documentation

9.1 Noise Study Report

The proponent has prepared a revised *Noise Study Report*, as included in **Appendix G**, based on the technical changes discussed above. The revised *Noise Study Report* indicates that the Little Creek Solar Project will be in compliance with the MOE's noise standards provided that acoustic louvers are installed at Inverters 5 and 6. Figures from both the preliminary and revised *Noise Study Reports* that show the overall 40dBA contour footprints are provided in **Appendix C.** The complete revised *Noise Study Report* is presented in **Appendix G.**

10. Environmental Effects

There are no additional potential environmental effects as a result of the proposed minor amendments that were not previously anticipated in the *Project Description Report, Construction Plan Report, Design and Operations Report, Decommissioning Plan Report Natural Heritage Assessment Reports*, and *Water Report and EIS* that were submitted as part of the original REA application. Mitigation measures proposed to reduce or eliminate potential negative effects to the natural and human environments are documented in the *Construction Plan Report, Design and Operations Report, Water Report and EIS* and *Natural Heritage Assessment Reports* provided with the original application.

11. Amendments to the Original REA Submission Package

Based on the original REA submission to the MOE approved on January 25, 2013, the following table outlines which reports in the original REA submission would be affected by the proposed minor changes. For each proposed change, the report and section(s) affected are listed where the proposed changes as outlined in this REA Amendment Report would replace the text in the original report where the details are related to the Little Creek Solar Project. Changes to the *Noise Study Report* are addressed through the submission of the revised report in **Appendix G**.

Please note, where technical reports are provided as appendices to other reports, the table below outlines the changes to be made in the technical report and would also apply where the report is appended.

Proposed Change	Report	Section Affected
Reduction in nameplate capacity.	Summary of REA Documents	Section 2.2.3
	Project Description Report	Section 2.3, 3.1.1
	Construction Plan Report	Section 2, 3.2.2
	Design and Operations Report	Section 2, 4
	Natural Heritage Assessment, Water Report and EIS	Section 1, 2, 8, 10
	Noise Impact Study	Section 3
Change in access road locations and reduction in road length and coverage.	Summary of REA Documents	Section 2.2.3
	Construction Plan Report	Section 3.2.6, Appendix A
	Design and Operations Report	Appendix A
	Natural Heritage Assessment, Water Report and EIS	Figure 1, Figure 2
Reduction in number of solar panels.	Summary of REA Documents	Section 2.2.3
	Project Description Report	Section 3.1.1
	Construction Plan Report	Section 3.2.2
	Design and Operations Report	Section 4
Change in solar panel model and energy output.	Summary of REA Documents	Section 2.2.3
	Project Description Report	Section 3.1.1
	Construction Plan Report	Section 3.2.2
	Design and Operations Report	Section 4, Appendix F
Reduction in the number of inverter stations.	Summary of REA Documents	Section 2.2.3
	Project Description Report	Section 3.1.3
	Construction Plan Report	Section 3.2.3, Appendix A
	Design and Operations Report	Section 4
	Noise Impact Study	Section 3, 3.3.6, Appendix C, Appendix D, Appendix E
Change in inverter station model and locations.	Construction Pan Report	Appendix A
	Noise Impact Study	Section 3, 3.3.6, Appendix C, Appendix D, Appendix E
	Design and Operations Report	Appendix F
Change in substation model.	Noise Impact Study	Section 3, 3.3.6, Appendix C, Appendix D, Appendix E
Reduction of the project area inside the perimeter fence.	Project Description Report	Section 2
	Construction Plan Report	Section 2, 4.8, 4.8.2, Appendix A
	Design and Operations Report	Section 2, Figure 1, Appendix A
	Natural Heritage Assessment, Water Report and EIS	Figure 1, Figure 2
	Noise Impact Study	Appendix B, Appendix C

12. Summary

The view of the proponent is that the above-listed amendments to the Little Creek Solar Project are improvements for the neighbouring residents and the environment. None of the amendments will create any potential negative environmental effects to natural features, water bodies or neighbouring residents. As indicated in **Section 9.1**, acoustic louvers will be required for two inverters to ensure the proposed equipment is in compliance with MOE standards. A Notice of REA Amendment and covering letter outlining the proposed technical changes were distributed to all project stakeholders on November 4, 2013. A copy of the letter and notice sent are included in **Appendix H**.

Appendix A

REA NUMBER: 3068-93AP8E

Ontario

Ministry of the Environment
Ministère de l'Environnement

RENEWABLE ENERGY APPROVAL

NUMBER 3068-93AP8E
Issue Date: January 25, 2013

CSI Solar Project 16 Inc.
545 Speedvale Avenue West
Guelph, Ontario
N1K 1E6

Project Location: Little Creek Solar Project
Part of Lot 14 and 15, Concession 4 and 5
Town of Greater Napanee, County of Lennox and Addington

You have applied in accordance with Section 47.4 of the Environmental Protection Act for approval to engage in a renewable energy project in respect of Class 3 solar facility consisting of the following:

- the construction, installation, operation, use and retiring of a Class 3 solar facility with a total name plate capacity of up to approximately 10 megawatts (AC).

For the purpose of this renewable energy approval, the following definitions apply:

1. "Acoustic Assessment Report" means the report included in the Application and entitled "Noise Impact Assessment Report" prepared by GL Garrad Hassan, dated June 7, 2012 and signed by Airen Nercessian;

2. "Acoustic Audit" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Equipment, assessed to determine compliance with the Noise Performance Limits set out in this Approval;

3. "Acoustic Audit Report" means a report presenting the results of an Acoustic Audit;

4. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is knowledgeable about Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from solar facilities;

5. "Act" means the *Environmental Protection Act* , R.S.O 1990, c.E.19, as amended;

6. "Adverse Effect" has the same meaning as in the Act;

7. "Application" means the application for a Renewable Energy Approval dated May 7, 2012, and signed by Kerry Adler, President & CEO, SkyPower Limited, and all supporting documentation submitted with the application, including amended documentation submitted up to the date this Approval is issued;

8. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;

9. "A-weighting" means the frequency weighting characteristic as specified in the International Electrotechnical Commission (IEC) Standard 61672, and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound. It is denoted as "A";

10. "A-weighted Sound Pressure Level" means the Sound Pressure Level modified by application of an A-weighting network. It is measured in decibels, A-weighted, and denoted "dBA";

11. "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum";

12. "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas:

    a. sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours);

    b. low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours);

    c. no clearly audible sound from stationary sources other than from those under impact assessment.

13. "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:

    a. a small community with less than 1000 population;

    b. agricultural area;

    c. a rural recreational area such as a cottage or a resort area; or

    d. a wilderness area.

14. "Company" means CSI Solar Project 16 Inc. and includes its successors and assignees;

15. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;

16. "Director" means a person appointed in writing by the Minister of the Environment pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;

17. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;

18. "Equipment" means the twenty (20) 500 kilowatt inverters, ten (10) 1.29 megavolt ampere transformers, and one (1) 10 megavolt ampere transformer substation, and associated ancillary equipment identified in this Approval and as further described in the Application, to the extent approved by this Approval;

19. "Equivalent Sound Level" is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is denoted L_{eq} and is measured in dB A-weighting (dBA);

20. "Facility" means the renewable energy generation facility, including the Equipment, as described in this Approval and as further described in the Application, to the extent approved by this Approval;

21. "IEEE Standard C57.12.90" means the IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers, 2010.

22. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment;

23. "Ministry" means the ministry of the government of Ontario responsible for the Act and includes all officials, employees or other persons acting on its behalf;

24. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, barriers, silencers, acoustical louvres, hoods and acoustical treatment, described in the Acoustic Assessment Report and Schedule C of this Approval;

25. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;

26. "Point of Reception" has the same meaning as in Publication NPC-205 or Publication NPC-232, as applicable, and is subject to the same qualifications described in those documents;

27. "Publication NPC-103" means the Ministry Publication NPC-103, "Procedures", August 1978;

28. "Publication NPC-104" means the Ministry Publication NPC-104, "Sound Level Adjustments", August 1978;

29. "Publication NPC-205" means the Ministry Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October 1995;

30. "Publication NPC-232" means the Ministry Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October 1995;

31. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995;

32. "Sound Level" means the A-weighted Sound Pressure Level;

33. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level L_{eq};

34. "Sound Power Level" means is ten times the logarithm to the base of 10 of the ratio of the sound power (Watts) of a noise source to standard reference power of 10^{-12} Watts;

35. "Sound Pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro pascal (μPa);

36. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure (μPa) of a sound to the reference pressure of 20 μPa;

37. "UTM" means Universal Transverse Mercator coordinate system.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

A - GENERAL

A1. The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

(a) Schedule A - Facility Description
(b) Schedule B - Coordinates of the Equipment and Noise Specifications
(c) Schedule C - Noise Control Measures

A2. Where there is a conflict between a provision of this Approval and any document submitted by the Company, the conditions in this Approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Company, the document bearing the most recent date shall take precedence.

A3. The Company shall ensure a copy of this Approval is:

(1) accessible, at all times, by Company staff operating the Facility and;

(2) submitted to the clerk of each local municipality and upper-tier municipality in which the Facility is situated.

A4. If the Company has a publicly accessible website, the Company shall ensure that the Approval and the Application are posted on the Company's publicly accessible website within five (5) business days of receiving this Approval.

A5. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.

A6. The Facility shall be retired in accordance with the Decommissioning Plan Report and any reasonable directions provided by the Director or District Manager.

A7. The Company shall provide the District Manager and the Director at least ten (10) days written notice of the following:

(1) the commencement of any construction or installation activities at the project location; and

(2) the commencement of the operation of the Facility.

A8. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the Ministry of Agriculture, Food and Rural Affairs to discuss its plans for the decommissioning of the Facility, and follow any reasonable directions provided by that ministry in respect of the Company's plans to restore the project location to its previous agricultural capacity.

B - EXPIRY OF APPROVAL

B1. Construction and installation of the Facility must be completed within three (3) years of the later of:

(1) the date this Approval is issued; or

(2) if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.

B2. This Approval ceases to apply in respect of any portion of the Facility not constructed or installed before the later of the dates identified in Condition B1.

C - NOISE PERFORMANCE LIMITS

C1. The Company shall ensure that:

(1) the Sound Levels from the Equipment, at the Points of Reception identified in the Acoustic Assessment Report, comply with the Sound Level Limit of 40 dBA as described in Publication NPC-232, subject to adjustment for tonality as described in Publication NPC-104;

(2) the Equipment is constructed and installed at either of the following locations:

(a) at the locations identified in Schedule B of this Approval; or

(b) at a location that does not vary by more than 10 metres from the locations identified in Schedule B of this Approval and provided that,

i) the Equipment will comply with Condition C1 (1), and

ii) all setback prohibitions established under O. Reg. 359/09 are complied with; and

(3) the Equipment complies with the noise specifications set out in Schedule B of this Approval;

(4) all of the Noise Control Measures are fully implemented prior to the commencement of the operation of the Facility.

C2. If the Company determines that some or all of the Equipment cannot be constructed in accordance with Condition C1 (2), prior to the construction and installation of the Equipment in question, the Company shall apply to the Director for an amendment to the terms and conditions of the Approval.

C3. Within three (3) months of the completion of the construction of the Facility, the Company shall submit to the Director a written confirmation signed by an individual who has the authority to bind the Company that the UTM coordinates of the "as constructed" Equipment comply with the requirements of Condition C1 (2).

D - ACOUSTIC AUDIT

D1. The Company shall carry out an Acoustic Audit in accordance with the procedures set out in Publication NPC-103, and shall submit to the District Manager and the Director an Acoustic Audit Report prepared by an Independent Acoustical Consultant in accordance IEEE Standard C57.12.90 and with the requirements of Publication NPC-233, no later than six (6) months after the commencement of the operation of the Facility.

E - GROUNDWATER MONITORING

E1. Prior to the construction and installation of the Facility, the Company shall develop and implement a pre- and post-construction groundwater monitoring program, which shall include, as a minimum, the following information:

(1) Identification of groundwater monitoring wells to be established at appropriate up and down gradient boundary locations of the project location.

(2) Identification of groundwater monitoring parameters, monitoring frequency, and trigger concentrations based on appropriate information as deemed necessary for the monitoring wells as described in Condition E1 (1).

E2. The Company shall report the summary of the results of the pre- and post-construction groundwater monitoring program on an annual basis to the District Manager.

F - STORMWATER MANAGEMENT

F1. The Company shall employ best management practices for stormwater management and sediment and erosion control during construction, installation, use, operation, maintenance and retiring of the Facility, as described in the Application.

G - WATER TAKING ACTIVITIES

G1. The Company shall not take more than 50,000 litres of water on any day by any means during the construction, installation, use, operation, maintenance and retiring of the Facility.

H - SEWAGE WORKS OF THE TRANSFORMER SUBSTATION SPILL CONTAINMENT FACILITY

H1. The Company shall design and construct a transformer/substation spill containment facility which meets the following requirements:

(1) the spill containment area serving the transformer substation shall have a minimum volume equal to the volume of transformer oil and lubricants plus the volume equivalent to providing a minimum 24-hour duration, 50-year return storm capacity for the stormwater drainage area around the transformer under normal operating conditions;

(2) the containment facility shall have an impervious concrete floor and walls or impervious plastic liner on floor and walls, sloped toward an outlet, maintaining a freeboard of approximately 0.25 metres terminating approximately 0.30 metres above grade, and a minimum 300mm layer of crushed stoned (19mm to 38mm in diameter) within, all as needed in accordance to site specific conditions and final design parameters;

(3) the containment facility shall drain to an oil control device, such as an oil/water separator, a pump-out sump, an oil absorbing material in a canister or a blind sump; and

(4) the oil control device shall be equipped with an oil detection system and appropriate sewage appurtenances, such as, but not limited to: sump, oil/grit separator, pumpout manhole, level controllers, floating oil sensors, etc., that allows for batch discharges or direct discharges and for proper implementation of the monitoring program described in Condition H4.

H2. The Company shall:

(1) prior to the construction of the transformer substation spill containment facility, provide the District Manager and Director a report and drawings issued for construction signed and stamped by an independent Professional Engineer licensed in Ontario and competent in electrical engineering;

(2) within six (6) months of the completion of the construction of the transformer substation spill containment facility, provide the District Manager and Director a report and drawings issued for construction signed and stamped by an independent Professional Engineer licensed in Ontario which includes the following:

(a) as-built drawings of the sewage works;

(b) confirmation that the transformer substation spill containment facility has been designed and installed according to appropriate specifications; and

(c) confirmation of the adequacy of the operating procedures and the emergency procedures manuals as it pertains to the installed sewage works.

(3) as a minimum, check the oil detection system on a monthly basis and create a written record of the inspections;

(4) ensure that the effluent is essentially free of floating and settle-able solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters;

(5) immediately identify and clean-up all losses of oil from the transformer;

(6) upon identification of oil in the effluent pumpout, take immediate action to prevent the further occurrence of such loss; and

(7) ensure that equipment and material for the containment, clean-up and disposal of oil and materials contaminated with oil are kept within easy access and in good repair for immediate use in the event of:

(a) loss of oil from the transformer,

(b) a spill within the meaning of Part X of the Act, or

(c) the identification of an abnormal amount of oil in the effluent.

H3. The Company shall design, construct and operate the sewage works such that the concentration of the effluent parameter named in the table below does not exceed the maximum concentration objective shown for that parameter in the effluent, and shall comply with the following requirements:

Effluent Parameters	Maximum Concentration Objective
Oil and Grease	15mg/L

(1) notify the District Manager as soon as reasonably possible of any exceedance of the maximum concentration objective set out in the table above;

(2) take immediate action to identify the cause of the exceedance; and

(3) take immediate action to prevent further exceedances.

H4. Upon commencement of the operation of the Facility, the Company shall establish and carry out the following monitoring program for the sewage works:

(1) the Company shall collect and analyze the required set of samples at the sampling points listed in the table below in accordance with the measurement frequency and sample type specified for the effluent parameter, oil and grease, and create a written record of the monitoring:

Effluent Parameters	Measurement Frequency and Sample Points	Sample Type
Oil and Grease	B – Batch, i.e., for each discrete volume in the sewer appurtenance as per H1(4) prior to pumpout; or Q – Quarterly for direct effluent discharge, i.e., four times over a year, relatively evenly spaced.	Grab

(2) in the event of an exceedance of the maximum concentration objective set out in the table in Condition H3, the Company shall:

(a) increase the frequency of sampling to once per month, for each month that effluent discharge occurs, and

(b) provide the District Manager, on a monthly basis, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling and reporting is no longer required; and

(3) if over a period of twenty-four (24) months of effluent monitoring under Condition H4(1), there are no exceedances of the maximum concentration set out in the table in Condition H3, the Company may reduce the measurement frequency of effluent monitoring to a frequency as the District Manager may specify in writing, provided that the new specified frequency is never less than annual.

H5. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition H4:

(1) Ministry of the Environment publication "Protocol for the Sampling and Analysis of Industrial/ Municipal Wastewater", January 1999, as amended from time to time by more recently published editions, and

(2) the publication "Standard Methods for the Examination of Water and Wastewater", 21st edition, 2005, as amended from time to time by more recently published editions.

I - ROAD USERS AGREEMENT

I1. The Company shall make reasonable efforts to enter into a Road Users Agreement with the Town of Greater Napanee and the County of Lennox and Addington.

I2. If a Road Users Agreement has not been signed with the Town of Greater Napanee and the County of Lennox and Addington within three (3) months of receiving this Approval, the Company shall provide a written explanation as to why this has not occurred.

J - ARCHAEOLOGICAL RESOURCES

J1. The Company shall implement all of the recommendations, if any, for further archaeological fieldwork and for the protection of archaeological sites found in the consultant archaeologist's report included in the Application, and which the Company submitted to the Ministry of Tourism, Culture and Sport in order to comply with clause 22 (2) (b) of O. Reg. 359/09.

J2. Should any previously undocumented archaeological resources be discovered, the Company shall:

(1) cease all alteration of the area in which the resources were discovered immediately;

(2) engage a consultant archaeologist to carry out the archaeological fieldwork necessary to further assess the area and to either protect and avoid or excavate any sites in the area in accordance with the *Ontario Heritage Act* , the regulations under that act and the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists* ; and

(3) notify the Director as soon as reasonably possible.

K - OPERATION AND MAINTENANCE

K1. Prior to the commencement of the operation of the Facility, the Company shall prepare a written manual for use by Company staff outlining the operating procedures and a maintenance program for the Equipment that includes as a minimum the following:

(1) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;

(2) emergency procedures;

(3) procedures for any record keeping activities relating to operation and maintenance of the Equipment; and

(4) all appropriate measures to minimize noise emissions from the Equipment.

K2. The Company shall;

(1) update, as required, the manual described in Condition K1; and

(2) make the manual described in Condition K1 available for review by the Ministry upon request.

K3. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition K1.

L - RECORD CREATION AND RETENTION

L1. The Company shall create written records consisting of the following:

(1) an operations log summarizing the operation and maintenance activities of the Facility;

(2) within the operations log, a summary of routine and Ministry inspections of the Facility; and

(3) a record of any complaint alleging an Adverse Effect caused by the construction, installation, use, operation, maintenance or retirement of the Facility.

L2. A record described under Condition L1(3) shall include:

(1) a description of the complaint that includes as a minimum the following:

(a) the date and time the complaint was made;

(b) the name, address and contact information of the person who submitted the complaint;

(2) a description of each incident to which the complaint relates that includes as a minimum the following:

(a) the date and time of each incident;

(b) the duration of each incident;

(c) the wind speed and wind direction at the time of each incident;

(d) the ID of the Equipment involved in each incident and its output at the time of each incident;

(e) the location of the person who submitted the complaint at the time of each incident; and

(3) a description of the measures taken to address the cause of each incident to which the complaint relates and to prevent a similar occurrence in the future.

L3. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition L1, and make these records available for review by the Ministry upon request.

M - NOTIFICATION OF COMPLAINTS

M1. The Company shall notify the District Manager of each complaint within two (2) business days of the receipt of the complaint.

M2. The Company shall provide the District Manager with the written records created under Condition L2 within eight (8) business days of the receipt of the complaint.

M3. If the Company receives a complaint related to groundwater, the Company shall contact the District Manager within one (1) business day of the receipt of the complaint to discuss appropriate measures to manage any potential groundwater issues.

N - CHANGE OF OWNERSHIP

N1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes:

(1) the ownership of the Facility;

(2) the operator of the Facility;

(3) the address of the Company;

(4) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R.S.O. 1990, c.B.17, as amended, shall be included in the notification; and

(5) the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act* , R.S.O. 1990, c. C.39, as amended, shall be included in the notification.

SCHEDULE A

Facility Description

The Facility shall consist of the construction, installation, operation, use and retiring of the following:

(a) 10 arrays of photovoltaic (PV) modules or panels with a total name plate capacity of up to approximately ten (10) megawatts (DC) or ten (10) megawatts (AC), with each array containing one (1) cluster consisting of two (2) 500 kilowatts inverters and one (1) 1.29 megavolt ampere transformer; and

(b) associated ancillary equipment, systems and technologies including, but not limited to, one (1) 10 megavolt ampere transformer substation, on-site access roads, below and above grade cabling, and below and above grade distribution and transmission lines,

all in accordance with the Application.

SCHEDULE B

Coordinates of the Equipment and Noise Specifications

Table B1: Coordinates and Maximum Sound Power Level of Inverters, Inverter Transformers and Transformer Substation. Coordinates of the Equipment are listed below in UTM, Z17-NAD83 projection

Source ID	Maximum Sound Power Level (dBA)	Easting (m)	Northing (m)	Source Description
Inv1	95.4	346,226	4,896,728	2 x 500 kilowatts Inverters, See Table B2 below
Inv2	95.4	346,010	4,896,565	2 x 500 kilowatts Inverters, See Table B2 below
Inv3	95.4	345,989	4,896,749	2 x 500 kilowatts Inverters, See Table B2 below
Inv4	95.4	346,113	4,896,554	2 x 500 kilowatts Inverters, See Table B2 below
Inv5	95.4	346,420	4,896,728	2 x 500 kilowatts Inverters, See Table B2 below
Inv6	95.4	346,440	4,896,684	2 x 500 kilowatts Inverters, See Table B2 below
Inv7	95.4	346,307	4,896,576	2 x 500 kilowatts Inverters, See Table B2 below
Inv8	95.4	346,092	4,896,750	2 x 500 kilowatts Inverters, See Table B2 below
Inv9	95.4	346,307	4,896,966	2 x 500 kilowatts Inverters, See Table B2 below
Inv10	95.4	346,307	4,896,846	2 x 500 kilowatts Inverters, See Table B2 below
T1	81	346,226	4,896,733	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T2	81	346,010	4,896,570	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T3	81	345,989	4,896,754	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T4	81	346,113	4,896,559	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T5	81	346,420	4,896,733	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T6	81	346,440	4,896,689	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T7	81	346,307	4,896,581	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T8	81	346,092	4,896,755	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T9	81	346,307	4,896,971	1.29 megavolt ampere Inverter Transformer, See Table B3 below
T10	81	346,307	4,896,851	1.29 megavolt ampere Inverter Transformer, See Table B3 below
Transf11	92	346,154	4,896,381	10 megavolt ampere Transformer Substation, See Table B4 below

Note: The inverter, inverter transformer and transformer substation Sound Power Level values in the above table include the 5 Decibel adjustment for tonality as prescribed in Publication NPC-104.

SCHEDULE B (cont.)

Table B2: Maximum Sound Power Spectrum (Decibel) of Inverter Pair

Inverter Pair	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Sound Power Level (Decibel)	81.9	83.3	91.1	91.1	85.7	78.2	68.5	78.1

Table B3 : Maximum Sound Power Spectrum (Decibel) of Inverter Transformer

Inverter Transformer	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Sound Power Level (Decibel)	57.4	69.5	72	77.4	74.6	70.8	65.6	56.5

Table B4 : Maximum Sound Power Spectrum (Decibel) of Transformer Substation

Transformer Substation	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Sound Power Level (Decibel)	68.4	80.5	83.0	88.4	85.6	81.8	76.6	67.5

SCHEDULE C

Noise Control Measures

Acoustic Enclosure

Eight (8) acoustic enclosures enclosing inverter clusters 1 to 8. The openings of the acoustic enclosures will be fitted with acoustic louvers, capable of providing the following values of noise reduction in 1/1 octave band centre frequencies:

Acoustic Louvre Specifications, [Decibel]

Name	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Acoustic Louvre	0	10	10	12	16	23	18	0

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions A1 and A2 are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in the manner in which it was described for review and upon which Approval was granted. These conditions are also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Conditions A3 and A4 are included to require the Company to provide information to the public and the local municipality.

3. Conditions A5, A6 and A8 are included to ensure that final retirement of the Facility is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure long-term protection of the health and safety of the public and the environment.

4. Condition A7 is included to require the Company to inform the Ministry of the commencement of activities related to the construction, installation and operation of the Facility.

5. Condition B is intended to limit the time period of the Approval.

6. Condition C1 is included to provide the minimum performance requirement considered necessary to prevent an Adverse Effect resulting from the operation of the Equipment and to ensure that the noise emissions from the Equipment will be in compliance with applicable limits set in Publication NPC-232.

7. Conditions C2 and C3 are included to ensure that the Equipment is constructed, installed, used, operated, maintained and retired in a way that meets the regulatory setback prohibitions set out in O. Reg. 359/09.

8. Condition D is included to require the Company to gather accurate information so that the environmental noise impact and subsequent compliance with the Act, O. Reg. 359/09, Publication NPC-232 and this Approval can be verified.

9. Conditions E, F, G, H and I are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in a way that does not result in an Adverse Effect or hazard to the natural environment or any persons.

10. Condition J is included to protect archaeological resources that may be found at the project location.

11. Condition K is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, O. Reg. 359/09 and this Approval.

12. Condition L is included to require the Company to keep records and provide information to the Ministry so that compliance with the Act, O. Reg. 359/09 and this Approval can be verified.

13. Condition M are included to ensure that any complaints regarding the construction, installation, use, operation, maintenance or retirement of the Facility are responded to in a timely and efficient manner.

14. Condition N is included to ensure that the Facility is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.

NOTICE REGARDING HEARINGS

In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.

In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.

Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The signed and dated notice requiring the hearing should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

This notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, 15th Floor Toronto, Ontario M5G 1E5	AND	The Environmental Commissioner 1075 Bay Street, 6th Floor Suite 605 Toronto, Ontario M5S 2B1	AND	The Director Section 47.5, *Environmental Protection Act* Ministry of the Environment 2 St. Clair Avenue West, Floor 12A Toronto, Ontario M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca , you can determine when this period ends.

Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.

DATED AT TORONTO this 25th day of January, 2013

Vic Schroter, P.Eng.
Director
Section 47.5, *Environmental Protection Act*

NC/
c: District Manager, MOE Kingston - District
Grace Pasceri, Canadian Solar Solutions Inc.

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO RENEWABLE ENERGY APPROVAL

NUMBER 3068-93AP8E
Issue Date: July 31, 2013

2243913 Ontario Corp., as general partner for and on behalf of Little Creek LP
545 Speedvale Ave W
Guelph, Ontario
N1K 1E6

Site Location: Little Creek Solar
Lot Parts of Lots 14 and 15, Concession 4 and 5
Greater Napanee Town, County of Lennox and Addington

You are hereby notified that I have amended Approval No. 3068-93AP8E issued on January 25, 2013 for Little Creek Solar Project , as follows:

A - The definitions of "Application" and "Company" on page 2 of the Approval are deleted and replaced with the following:

7. "Application" means the application for a Renewable Energy Approval dated May 7, 2012, and signed by Kerry Adler, President & CEO, SkyPower Limited, and all supporting documentation submitted with the application, including amended documentation submitted up to January 25, 2013, and further documentation supporting the decision of the Environmental Review Tribunal dismissing an appeal of this Approval (ERT Case File Nos. 13-009/13-010/13-011), and the amendment application dated May 17, 2013 and signed by Colin Parkin, General Manager, on behalf of Little Creek LP, and all supporting documentation submitted with the Application, including amended documentation submitted up to the date this Approval is issued;

14. "Company" means 2243913 Ontario Corp., as general partner for and on behalf of Little Creek LP, the partnership under the laws of Ontario, and includes its successors and assignees;

B - Condition A1 on page 4 of the Approval is deleted and replaced with the following:

A1. The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

(a) Schedule A - Facility Description
(b) Schedule B - Coordinates of the Equipment and Noise Specifications
(c) Schedule C - Noise Control Measures
(d) Schedule D - Minutes of Settlement, dated March 26, 2013.

C - Condition A5 on page 5 of the Approval is deleted and replaced with the following:

A5. The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.

D - Condition A8 on page 5 of the Approval is deleted and replaced with the following:

A8. The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the ministry responsible for agriculture in Ontario at that time to discuss its plans for the decommissioning of the Facility, and follow any reasonable directions provided by that ministry in respect of the Company's plans to restore the project location to its previous agricultural capacity.

E - The following new Condition A9 is added to the Approval:

A9. The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the Town of Greater Napanee to discuss its plans for the decommissioning of the Facility, and follow any reasonable directions provided by that municipality in respect of the Company's plans to restore the project location to its previous agricultural use.

F - The following new Schedule D is added to the Approval:

SCHEDULE D

MINUTES OF SETTLEMENT - DATED MARCH 26, 2013

ERT File Nos. 13-009/13-010/13-011

ENVIRONMENTAL REVIEW TRIBUNAL

IN THE MATTER OF appeals by James and Kathy Cuthill, Pamela McCracken and the Corporation of the Town of Greater Napanee filed February 8, 2013 for a Hearing before the Environmental Review Tribunal ("Tribunal") pursuant to section 142.1 of the *Environmental Protection Act,* R.S.O. 1990, *c.* E.19, as amended with respect to a Renewable Energy Approval issued by the Director, Ministry of the Environment, on January 25, 2013 to CSI Solar Project Inc., under section 142.1 of the *Environmental Protection Act,* regarding a Class 3 Solar facility consisting of the construction, installation, operation use and retiring of a solar facility, with a total name place capacity of 10 megawatts (MV) to be located on the south side of Little Creek Road, in the County of Lennox and Addington, consisting of part of Lots 14 and 15, Concessions 4 and 5 in the geographic Township of North Fredericksburg in the town of Greater Napanee (the "Site"); and

IN THE MATTER OF a proposed withdrawal of an appeal as part of a settlement agreement.

MINUTES OF SETTLEMENT

WHEREAS the Director issued Renewable Energy Approval #3068-93AP8E (the "REA") on January 25, 2013 to CSI Solar Project 16 Inc. ("CSI"); and

WHEREAS James and Kathy Cuthill, Pamela McCracken and the Corporation of the Town of Greater Napanee (the "Appellants") filed Notices of Appeal requiring a hearing before the Tribunal with respect to the REA; and

WHEREAS the Appellants, CSI and the Director (the "Parties") agree that these proceedings should be resolved by way of an Order from the Tribunal approving these Minutes of Settlement and dismissing these proceedings;

THEREFORE, the Parties agree as follows:

1. These Minutes of Settlement shall constitute a full and final settlement of the above-noted appeals.

2. The Appellants request that their appeals be withdrawn by execution of these Minutes of Settlement.

3. CSI shall amend the Construction Plan Report, dated December 2011, that forms part of the REA Application, to incorporate the addendum described in Schedule "A" to these Minutes of Settlement ("Addendum to the Construction Plan Report"). Where there is a conflict between a provision of the Addendum to the Construction Plan Report and the Construction Plan Report, dated December 2011, the terms of the Addendum to the Construction Plan Report shall take precedence. The Addendum to the Construction Plan Report shall be made publicly available on CSI's website at: **www.littlecreeksolar.com.**

4. CSI shall amend the Decommissioning Plan Report, dated December 2011, that forms part of the REA Application, to incorporate the addendum described in Schedule "B" to these Minutes of Settlement ("Addendum to the Decommissioning Plan Report"). Where there is a conflict between a provision of the Addendum to the Decommissioning Plan Report and the Decommissioning Plan Report, dated December 2011, the terms of the Addendum to the Decommissioning Plan Report shall take precedence. The Addendum to the Decommissioning Plan Report shall be made publicly available on CSI's website at: **www.littlecreeksolar.com.**

5. The Director shall amend the REA, as follows:

   (i) The definition of "Application" at paragraph 7 shall be amended to read as follows:

   "Application" means the application for a Renewable Energy Approval dated May 7, 2012, and signed by Kerry Adler, President & CEO, SkyPower Limited, and all supporting documentation submitted with the application, including amended documentation submitted up to January 25, 2013, and further documentation supporting the decision of the Environmental Review Tribunal dismissing an appeal of this Approval (ERT Case File Nos. 13-009/13-010/13-011);

(ii) Condition A5 shall be amended to read as follows:

The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.

(iii) Condition A8 shall be amended to read as follows:

The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the ministry responsible for agriculture in Ontario at that time to discuss its plans for the decommissioning of the Facility, and follow any reasonable directions provided by that ministry in respect of the Company's plans to restore the project location to its previous agricultural capacity.

(iv) The following new condition shall be added to the REA as Condition A9:

The Company shall, at least twelve (12) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the Town of Greater Napanee to discuss its plans for the decommissioning of the Facility, and follow any reasonable directions provided by that municipality in respect of the Company's plans to restore the project location to its previous agricultural use.

(v) An executed copy of these Minutes of Settlement shall be appended to the REA as “Schedule D”.

(vi) Condition A1 shall be amended to read as follows:

The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

(a) Schedule A - Facility Description
(b) Schedule B - Coordinates of the Equipment and Noise Specifications
(c) Schedule C - Noise Control Measures
(d) Schedule D – Minutes of Settlement, [with date]

6. The amendments to the REA, the Addendum to the Construction Plan Report and the Addendum to the Decommissioning Plan Report set out in paragraphs 3 to 5 above are consistent with the purpose and provisions of the relevant legislation and are in the public interest.

7. The Appellants shall not appeal any amendments to the REA made pursuant to these Minutes of Settlement.

8. These Minutes of Settlement may be executed by one or more of the Parties by facsimile transmitted signature, and all Parties agree that the reproduction of any signature on a copy of this Agreement by way of a facsimile device will be treated as though such reproduction is an executed original copy of this Agreement.

9. These Minutes of Settlement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument.

IN WITNESS WHEREOF the Parties have executed these Minutes of Settlement effective as of the 26th day of March, 2013, by their duly authorized representatives.

_____ _____

Per: **Date**
For the Corporation of the Town of Greater Napanee

Appellant

James Cuthill Appellant	**Date**
Kathy Cuthill Appellant	**Date**
Pam McCracken Appellant	**Date**
Per: **for CSI Solar Project 16 Inc.** Respondent	**Date**
Vic Schroter, Director under the *EPA* **Ministry of the Environment** Respondent	March 20, 2013 **Date**

Appellant

James Cuthill — March 21, 2013
Date

Appellant

Kathy Cuthill — March 21, 2013
Date

Appellant

Pam McCracken — Date

Appellant

Per:
for Capital Solar Project 16 Inc. — Date
Respondent

Vic Schroter, Director under the *EPA* — Date
Ministry of the Environment
Respondent

ATTN: Albert Engle 1 pag total.

Appellant

James Cuthill Appellant	**Date**
Kathy Cuthill Appellant	**Date**
Pam McCracken **Pam McCracken** Appellant	March 25, 2013. **Date**
Per: **for CSI Solar Project 16 Inc.** Respondent	**Date**
Vic Schroter, Director under the *EPA* **Ministry of the Environment** Respondent	**Date**

The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

(a) Schedule A - Facility Description
(b) Schedule B - Coordinates of the Equipment and Noise Specifications
(c) Schedule C - Noise Control Measures
(d) Schedule D – Minutes of Settlement, [with date]

6. The amendments to the REA, the Addendum to the Construction Plan Report and the Addendum to the Decommissioning Plan Report set out in paragraphs 3 to 5 above are consistent with the purpose and provisions of the relevant legislation and are in the public interest.

7. The Appellants shall not appeal any amendments to the REA made pursuant to these Minutes of Settlement.

8. These Minutes of Settlement may be executed by one or more of the Parties by facsimile transmitted signature, and all Parties agree that the reproduction of any signature on a copy of this Agreement by way of a facsimile device will be treated as though such reproduction is an executed original copy of this Agreement.

9. These Minutes of Settlement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument.

IN WITNESS WHEREOF the Parties have executed these Minutes of Settlement effective as of the _____ day of March, 2013, by their duly authorized representatives.

Per: GORDON SCHERMERHORN, MAYOR
For the Corporation of the Town of Greater Napanee

MARCH 26, 2013
Date

SCHEDULE "A"

Addendum to the Construction Plan Report

Where there is a conflict between a provision of this Addendum and the Construction Plan Report, dated December 2011, the terms of this Addendum shall take precedence.

SECTION	ADDENDUM
Section 3.1 – Site Preparation	Site preparation is required for construction and installation of the Project components and generally includes clearing, grubbing and grading as necessary and installation or improvement of access roads. Site preparation tasks are as follows: · Clear marking of the extent of the Project Location and assurance that all construction personnel are aware of the extent of the Project Location; · Installation of temporary erosion and sediment control measures, including silt fencing around the entire perimeter of the site and other measures (e.g., straw bale dams and filter fabric) as required; · Clearing and grubbing of all areas for temporary road construction; · Clearing areas for solar arrays. Stripping of top soil shall be minimized and any top soil removed shall be stored in piles no higher than 0.3m, which piles shall be revegetated in accordance with section 3.5.2 No significant grading is anticipated; however, if required, it will maintain the natural drainage pattern in the area. Topsoil will not be removed from the site. All clearing, grubbing and grading in the area of the Archaeological Site BbGf-42 shall be monitored by a qualified Heritage Assessor for evidence of a potential burial ground. All vehicles will meet Ontario Ministry of Transportation standards for axle loads. All transportation routes will be discussed with the Town of Greater Napanee's Engineering Department. At the time of write-up of the present report, it is expected that vehicles will travel on Provincial Highway 401 and then use County Roads 8 and 9 to the Project area. Transportation crews will be trained and equipped to respond to accidental spills. All Project vehicles will carry an emergency spill response kit. Construction activities shall be minimized in wet weather to reduce soil disturbance, rutting and soil compaction. With respect to tile drainage, the current understanding is that there is none on site. However, if tile drainage is encountered on site, best efforts will be made not to damage the tile drainage. If, despite best efforts, tile drainage is damaged, it will be repaired.

SECTION	ADDENDUM
3.2.1 – Foundations	The type of foundation will be determined based on subsurface conditions evaluated during a geotechnical assessment. Typically, this step will require the installation of ground screws or plate-pounded steel beams with possible pre-drilling. Topsoil removed for panel footings should not be moved more than 2 metres so that it can be easily returned during decommissioning and revegetated in accordance with section 3.5.2. The foundation for the inverter stations and transformer will be made of concrete. Approximately 1000 m3 of concrete will be required for the entire Project. The concrete may be prepared off-site and delivered by truck. Particular attention should be paid to not mix soil layers while excavating foundations. If excess topsoil is produced as a result of trench excavation, topsoil shall be carefully stockpiled on-site in layers 0.3 metres deep or less and revegetated in accordance with section 3.5.2.
3.2.3 – Collector System and Transformer	Each inverter station contains two 500 kW inverters that convert the direct current (DC) electricity produced by the panels to alternating current (AC) electricity suitable for distribution to the local grid. The inverter stations also contain a transformer to step up the output Electricity to be collected and directed to a transformer to step up the output to 44 kV. This Project will use 10 inverter clusters, each comprising 2 inverters, as well as one main step-up transformer. The underground cables will be buried in trenches 1 m deep and varying from 0.5 m to 1 m in width. As a cautionary measure, a tape will be layered 30 cm above the underground cabling system (i.e. buried 70 cm underground) to serve as markers. The trenched corridors will be restored with backfill to conform to the surrounding surface contours with appropriate materials for grounding. Particular attention should be paid to not mix soil layers while excavating trenches. If excess topsoil is produced as a result of trench excavation, topsoil shall be carefully stockpiled on-site in layers 0.3 metres deep or less and revegetated in accordance with section 3.5.2. All trenching in the area of the Archaeological Site BbGf-42 shall be monitored by a qualified Heritage Assessor for evidence of a potential burial ground.
3.2.6 – Access Roads	The internal road system for the Project will consist of approximately 4,000 m of granular roadways that are approximately 3.7m to 5m wide (as required by emergency services). The main access to the site will be off County Road 9 at the south end of the Project site. No new water crossings will be required for this Project, although an existing access route within 30 m of an intermittent tributary will be used. If gravel access road construction requires the removal of topsoil, efforts will be made to remove topsoil based on soil horizon depth, topsoil will be carefully stockpiled on-site in layers 0.3 metres deep or less and revegetated in accordance with section 3.5.2. A geotextile fabric shall be placed between the subsoil and the gravel materials of the access road to prevent mixing. A record of the locations of the stockpiles will be prepared to facilitate restoration.

SECTION	ADDENDUM
3.5.2 – Site Reclamation	The disturbed areas will be stabilized to minimize potential for soil movement through mass wasting or surface erosion. Generally, salvaged subsoil will be replaced and capped with topsoil and salvaged organic material. The area around the PV panel installations will be seeded with a seed mixture that will best provide the desired performance attributes of rapid establishment, erosion control, low maintenance, weed suppression and long term soil fertility and structure improvement under the predicted light conditions found among the solar panels. 3) Prior to construction, the site shall be cultivated to remove vegetation. During construction, weeds and weed seeds shall be minimized in accordance with the requirements of all applicable laws and regulations. Seeding will ideally take place in the mid-August to late-September seeding window but if seeding is not possible during this time period, consultation with Stantec will take place to determine ideal timing, methodology and any soil stabilization requirements. Manual or chemical spot treatment in accordance with all applicable laws and regulations may be required to destroy noxious weeds depending upon the level of weed pressure on a particular site. A recommended seed mixture for all areas to be revegetated is: Sheep Fescue (Festuca ovina) - 50% by weight Canada Bluegrass (Poa compressa) - 30% by weight Redtop (Agrostis gigantea) - 10% by weight Birdsfoot Trefoil (Lotus corniculatus) - 10% by weight All temporary erosion and sediment control measures will be maintained until the vegetation is established.
4.3 – Terrain and Soils	**4.3.1 Potential Effects** Construction activities – including road building, soil stripping and grubbing and vegetation clearing at the Project site – have the potential to interact with the terrain and soil resources both within and beyond the immediate footprint of the Project. No soil is planned to be removed from the site during the Construction Phase. In the event that waste materials are created as part of this Project and these waste materials will eventually need to be removed from the Project site and recycled or disposed of in accordance with provincial waste management regulations. The final decision on waste disposal or recycling will be entrusted to the on-site contractor who will comply with Ontario's *Environmental Protection Act* . The Project-related effects on these environmental components include the following: · Change in terrain stability; · Change in soil compaction; and · Soil contamination from oil or fuel spills.

SECTION	ADDENDUM
	4.3.2 Effects Assessment *Change in Terrain Stability* Parameters used to assess terrain stability are thickness and quality of surface deposits, bedrock quality and surface water and groundwater conditions. The assessment of these parameters is based on surface observations and a preliminary Geotechnical Assessment [5]. Depending on the level of groundwater table, de-watering might be required at some locations. Mitigation measures for terrain stability and surface erosion also include: · Conducting additional geotechnical investigations prior to any soil excavation. In the event that the geotechnical assessment determines that one or more locations for the installation of racking systems or underground electrical infrastructure are not suitable, consideration will be given to alternate locations. All alternate locations will be within the Project area, and will comply with all constraints per this layout scenario (setbacks, noise levels, avoiding woodlots, etc.). · Confirming information about soil quality, drainage and groundwater conditions at photovoltaic arrays, racking systems and road locations through subsurface investigations; · Using best practices, such as abiding by the Erosion & Sediment Control Guideline (Greater Golden Horseshoe Area Conservation Authorities, 2006) [6]. *Change in Soil Compaction* Soil compaction occurs when soil particles are pressed together, reducing pore space between them. As the pore space is decreased within a soil, the bulk density is increased. The repetitive passing of construction machinery and trucks on the land may have effects on soil compaction. This effect will be limited to the areas used for access roads, which represent a very small portion of the affected lots within the Project area during operations. The Project area is underlain by a thin veneer of glaciolacustrine and clay and silty to sandy Newmarket Till. The thin deposits overlie Paleozoic Bedrock. Furthermore, the Paleozoic Bedrock is also found at the surface on and adjacent to the Project area [5]. Soil compaction mitigation practices will be undertaken after the Construction Phase on the temporary Project footprint. Mitigating the effects of soil compaction includes the following measure: · Access road width will be limited to approximately 3.7 - 5 m during operations and working areas will be restored. If needed, any temporary working areas required during construction will be tilled and turned over.

SECTION	ADDENDUM
	Assuming the application of the mitigation measures, soil density will be returned to its initial state in most temporary surfaces, limiting the compacted areas to the permanent surfaces occupied by the Project during operations. The effect is considered minimal and not significant. *Contamination of Soils from Oil and Fuel Spills* Spills may occur due to an accident or malfunction during construction activities. Mitigation measures include: · Training of the construction and maintenance crews to respond to accidental spills; · Equipping all Project vehicles with an emergency spill response kit; · Inspecting truck and machinery on a regular basis; and · Providing refueling and maintenance areas with a berm. In accordance with the Environmental Management and Emergency Response Plans, should spills occur, they will be reported to the Ministry of the Environment's Spills Action Centre immediately upon their discovery. Through the aforementioned Plans, the Proponent commits to routinely train and update applicable staff during all phases of the Project's life on spill reporting, containment, and proper spill clean-up and disposal procedures. Given the small quantities possibly involved and the planned mitigation measures proposed, the adverse effects on soil due to accidental oil or fuel spills is of minimal concern and not significant. *Follow-Up and Monitoring* Considering the minimal residual effects that the Project is expected to have on terrain stability, soil compaction or contamination, no follow-up or monitoring programs have been proposed or are considered necessary. However, a supervisor will be present on site, during construction, to ensure that all measures are applied to limit any potential effects.

SCHEDULE "B"

Addendum to the Decommissioning Plan Report

Where there is a conflict between a provision of this Addendum and the Decommissioning Plan Report, dated December 2011, the terms of this Addendum shall take precedence.

SECTION	ADDENDUM
Section 2.1 – Decommissioning during Construction (abandonment of Project)	It is extremely unlikely that the project would be dismantled during construction. In the event that the Project is abandoned during construction and associated work is not completed, the dismantling of equipment and restoration of lands to pre-construction conditions will follow the same procedure as for the decommissioning at the end of project life. Dismantling activities will include the procedures listed below: · Notification to relevant agencies that the project is halted and that the decommissioning plan will be implemented; · Dismantling of photovoltaic modules and support racks, using conventional construction equipment and trucks for hauling the parts off of the premises; · Removal of any foundations, if already poured; · Redistribution of any remaining soil in excavated or cleared areas, · Reseeding of exposed soils as necessary; · Removal of electrical lines and substation, if already installed; · Removal of supports for steel racking, if already installed; · Removal of fencing and posts, if already installed; · Removal of granular access roads and laydown areas; · Site Restoration as set out in Section 3.
Section 2.2 – Decommissioning after Ceasing Operation	At the end of the project's life, decommissioning will require dismantling of the components making up the solar energy facility. Components that will be dismantled or removed according to the decommissioning report include the following: · Photovoltaic modules, panels and wiring; · Racking systems and the support structures; · Inverters, transformers and generators; · Concrete foundations and underground infrastructure; · Temporary office trailers; · Transformer and the overhead/trenched electrical network and electrical poles; · Safety fences; and · Granular access roads and laydown area.

SECTION	ADDENDUM
Section 2.3.1 – Above-Ground Structure Decommissioning	The decommissioning of the above-ground structures will involve the following activities: · Installation of temporary erosion and sediment control measures, including silt fencing around the entire perimeter of the site and other measures (e.g., straw bale dams and filter fabric) as required; · Disconnection of the solar energy facility from the utility power grid; · Disconnection of photovoltaic modules from the site electrical network and removal from the support racks; · Return of the photovoltaic modules to the manufacturer for re-use, recycling or safe disposal offsite; · Dismantling the racking systems for re-use, recycling or safe disposal offsite; · Removal of above ground lines and poles that are not owned by Hydro-One and filling of holes with clean fill; · Removal of components from the communications tower for re-use, recycling or safe disposal off-site; · Dismantling of Inverters, generators and transformers and return to the manufacturer, for re-use, recycling or safe disposal off-site; · Decommissioning and demolition of the transformer in a manner appropriate to and in accordance with the standards and best practices of the day; · Removal of granular access roads and laydown areas and re-grading of these areas to provide pre-construction conditions and alleviate any soil compaction. · Site Restoration as set out in Section 3. One culvert, in place prior to project construction, currently allows for access to the site. Road bedding material will be removed and replaced with clean sub- and top-soil for reuse.
Section 2.3.2 – Below-Ground Structure Decommissioning	The below-ground decommissioning of the Project will involve the following activities: · Removal of underground electrical lines; · Removal of underground infrastructure and protective electrical structures involving concrete such as concrete electrical shelters and concrete pad foundations for inverters and transformers; · Backfilling of affected areas as necessary; · Recycling or safe off-site disposal of waste concrete.; · Removal of piles/supports for steel racking system for recycling or safe off-site disposal; and · Site Restoration as set out in Section 3.

SECTION	ADDENDUM
Section 2.3.3 – Equipment Dismantling and Removal	This decommissioning plan assumes that the area will still be re-converted to agricultural land, and thus the plan provides for the complete restoration of the areas used for the solar energy facility to return to their pre-Project conditions. The decommissioning will also weigh the different options and elect dismantling in a way that is safe, beneficial to the environment and beneficial to the landowners. If the facility is to be decommissioned and the solar energy facility is to be removed, the impacts will be similar to the construction phase, but in reverse sequence. For a detailed understanding of the construction activities, please refer to the Construction Plan Report provided in this REA Application. The components to the solar energy facility will be dismantled and removed by licensed subcontractors using similar techniques employed during the construction of the project. Conventional construction equipment will be used to dismantle the components and the materials will be recycled or re-used, where possible, or disposed of offsite at an approved and appropriate facility as per provincial waste management regulations.
Section 3 – Site Restoration	After the decommissioning process is completed, the land will be returned to the pre-Project conditions or to a state that is similar to its previous state. Restoration of lands is planned for the area where the array of photovoltaic modules were present, as well as alongside access roads. It is expected that some soil disturbance will occur during decommissioning of the solar facility. This is likely to occur during removal and transportation of above and below-ground infrastructure and components. Disturbance may include mixing of soil profiles (topsoil and subsoil), compaction, rutting, erosion, and decrease of soil fertility. It is expected that stockpiled topsoil and subsoil from the Construction Phase will be available when required during site restoration. Once all infrastructure and components have been removed from the site, protection from erosion, improving soil fertility and soil structure will become the primary concern and the choice of crops should reflect these concerns. Best management practices recognized at the time of decommissioning will be utilized to address these concerns. Specifically, deep ripping and/or sub-soiling of the soils may be carried out to alleviate compaction depending on the intended agricultural use. It is recommended that the rehabilitated lands be seeded with a legume-grass mixture for at least one to two years following decommissioning. This combination of both deep and shallow-rooting species will help stabilize soil conditions, enhances soil structure, and increase soil fertility. It will also provide high quality

SECTION	ADDENDUM
	forage (pasture and hay) once the crop is established. Deep-rooting legumes improve soil structure by helping break up any residual compaction while also supplying nitrogen to the soil. Grasses are characterized by shallower rooting and help to bind soil particles together, also improving soil structure. Both legumes and grasses add organic matter to the soil. The above legume-grass mixture may not be required depending on the level of disturbance that has occurred. A certified Professional Agrologist (P.Ag.) should be consulted to determine the level of rehabilitation effort that will be required to return the land to pre-Project conditions. It is also expected that the Director will impose a condition that requires CSI Solar Project 16 Inc. to generate an updated and comprehensive decommissioning plan twelve months in advance of the start of decommissioning. This plan will provide more site-specific restoration strategies that will help return the site to pre-Project conditions.

The reason for this amendment to the Approval is as follows:

The reason for the above amendment is to incorporate change in the ownership and operator of the Facility and also include terms and conditions of the Settlement Agreement entered into by the Appellants, the Director and the Approval Holder and accepted by the Environmental Review Tribunal.

This Notice shall constitute part of the approval issued under Approval No. 3068-93AP8E dated January 25, 2013

In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.

In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.

Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The signed and dated notice requiring the hearing should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

This notice must be served upon:

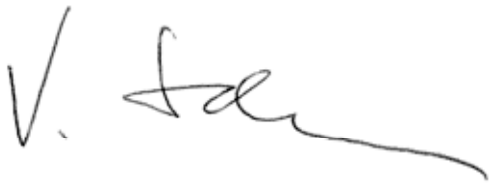
The Secretary*****		The Environmental Commissioner		The Director
Environmental Review Tribunal		1075 Bay Street, 6th Floor		Section 47.5, *Environmental Protection Act*
655 Bay Street, 15th Floor		Suite 605		Ministry of the Environment
Toronto, Ontario	AND	Toronto, Ontario	AND	2 St. Clair Avenue West, Floor 12A
M5G 1E5		M5S 2B1		Toronto, Ontario
				M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca , you can determine when this period ends.

Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.

DATED AT TORONTO this 31st day of July, 2013



Vic Schroter, P.Eng.
Director
Section 47.5, *Environmental Protection Act*

HM/

c: District Manager, MOE Kingston - District
Grace Pasceri, Little Creek LP

Appendix B

AGENCY CORRESPONDENCE

FW: Little Creek Solar Park Project (REA Number: 3068-93AP8E) - Notice of Amendment Letter

1 message

Grace Pasceri <Grace.Pasceri@canadiansolar.com> 21 October 2013 09:27
To: "Bellamy, Megan (mbellamy@dillon.ca)" <mbellamy@dillon.ca>

From: Grace Pasceri
Sent: Tuesday, October 15, 2013 4:48 AM
To: agatha.garciawright@ontario.ca
Cc: mohsen.keyvani@ontario.ca; Nick.Colella@ontario.ca; vic.schroter@ontario.ca
Subject: Little Creek Solar Park Project (REA Number: 3068-93AP8E) - Notice of Amendment Letter

Hi Agatha,

Please find attached a copy of the Notice of Amendment Letter for the Little Creek Solar Park Project (REA Number: 3068-93AP8E).

A hard copy has been sent to you via courier as well.

Thanks,

Grace

Grace Pasceri

Permitting Manager – Solar Farms

Canadian Solar Solutions Inc. - a subsidiary of Canadian Solar Inc. (NASDAQ: CSIQ)

CanadianSolar

545 Speedvale Avenue West

Guelph, Ontario N1K 1E6

T: 1 519 837 1881 ext. 2293

F: 1 519 837 2550

E: Grace.Pasceri@canadiansolar.com

W: http://www.canadian-solar.ca/

Please consider the environment before printing this email.

Summary Letter for Minor REA Amendment_Little Creek.pdf
349K

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Ms. Agatha Garcia-Wright
Director, Environmental Approvals Branch
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, ON M4V 1L5

October 15, 2013

RE: LITTLE CREEK SOLAR PROJECT REA AMENDMENT LETTER

Canadian Solar Solutions Inc. (Canadian Solar) is proposing to develop, construct and operate an 8.5 MW Class 3 solar project known as the Little Creek Solar Project. A Renewable Energy Approval (REA) application was submitted for this project, comprised of the solar project location and all project details. A REA was granted by the Ministry of the Environment (MOE) on January 25, 2013 (**REA Number: 3068-93AP8E**) and was subsequently amended in July 2013 based on an appeal and Hearing before the Environmental Review Tribunal. The appeal was settled on March 26, 2013. An approval for the amended REA was granted on July 31, 2013 (**REA Number: 3068-93AP8E**).

This letter provides an overview of additional technical amendments proposed for the project, which we believe to be minor in nature. We are seeking confirmation that the following are considered minor by the MOE before submitting a formal REA Amendment Report to the Ministry. We understand that the review and acceptance of this letter will take between 2-3 business days.

The amended design layout for Little Creek Solar Project maintains all components of the facility within the original boundaries of the project location as it outlined in the original REA application. No environmental effects are anticipated that were not previously discussed as part of the REA application. We have attached a figure that overviews both the preliminary and final layouts for the project as a tool for comparison.

The table below summarizes the proposed changes to Little Creek Solar Project.

Proposed Change	Rationale for Amendment	REA Reports Requiring Revision	Potential Environmental Effects
Reduction in AC nameplate capacity.	The original REA documents indicated a nameplate capacity of 10 MW AC. The updated project layout will have a reduced nameplate capacity of	Minor Revision: Project Description Report, Design and Operations Report, and Construction Plan Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change.

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Canadian Solar Solutions Inc.

545 Speedvale Avenue West
Guelph Ontario | Canada N1K 1E6
Phone + 1 519 837 1881
Fax + 1 519 837 2550
inquire.ca@canadiansolar.com
www.canadian-solar.ca

Proposed Change	Rationale for Amendment	REA Reports Requiring Revision	Potential Environmental Effects
	8.5 MW AC.		
Reduction of the project area inside the perimeter fence.	Due to a reduction in MW AC, there are fewer PV panels and inverter stations required.	Minor Revision: Project Description Report, Design and Operations Report, and Construction Plan Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change. Although the area inside the perimeter fence has been reduced, the project remains completely within the original fence line and project boundary.
Change in inverter station model and locations. Reduction in overall number of inverter stations.	The original REA documents indicated that an SC 500HE-US model would be used. The updated model will be an SMA SC800CP-CA model. The updated inverter station model and locations optimize the project layout and increase efficiency of the facility. Based on the reduction in MW AC and the change to the inverter station model, the overall number of inverter station locations is reduced.	Minor Revision: Project Description Report, Design and Operations Report, and Construction Plan Report Full Revision: Noise Study Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change. Although each inverter station has been relocated, all remain within the original project boundary.
Change in substation model and location	The original REA documents indicated	Minor Revision:	No additional environmental effects

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Proposed Change	Rationale for Amendment	REA Reports Requiring Revision	Potential Environmental Effects
	that the substation would be a Siemens model. The updated model will be a 7500/10000 MVA Step-up Transformer model created by Virginia Transformer Corp (VTC), which is a more efficient model. The location of the substation has also changed.	Project Description Report, Design and Operations Report, and Construction Plan Report <u>Full Revision:</u> Noise Study Report	not previously discussed as part of the REA application are anticipated as a result of this change.
Change in access road locations and reduction in road length and coverage.	To accommodate the revised locations of the inverter stations as a result of optimizing the layout and increasing the efficiency of the project.	<u>Minor Revision:</u> Project Description Report, Design and Operations Report, and Construction Plan Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change. All roads remain within the original project boundary.
Reduction in the number of solar panels.	The original REA documents indicated the facility would require approximately 50,184 panels. At this time, we expect a decrease in the number of panels from 50,184 to 39,240 panels (a decrease of 28%). This reduction is due to increased solar panel efficiency and a reduction from 10 MW	<u>Minor Revision:</u> Project Description Report, Design and Operations Report, and Construction Plan Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change.

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Proposed Change	Rationale for Amendment	REA Reports Requiring Revision	Potential Environmental Effects
	AC to 8.5 MW AC. As such, not as many solar panels are needed.		
Change in solar panel model and energy output.	The original REA documents indicated that the solar panel model would be TRINA TSM-PA05, 220W to 240W. At this time, the solar panel model will be a Canadian Solar CS6X-M Max power model, with the energy output increasing from 230W to 300W. These panels are more efficient and thus, fewer panels are required.	Minor Revision: Project Description Report, Design and Operations Report, and Construction Plan Report	No additional environmental effects not previously discussed as part of the REA application are anticipated as a result of this change.

Based on our review of the above proposed changes, further consultation with the Ministry of Natural Resources is not warranted as part of the minor amendment process. The Ministry of Natural Resources confirmed the original Natural Heritage Assessment (NHA) on November 17, 2011. As the final design for this project does not exceed the original project location boundary, no amendments to the Natural Heritage Assessment are required.

Similar to the above, further consultation is not warranted with the Ministry of Tourism, Culture and Sport as part of the minor amendment process. Stage 1, 2 and 3 Archaeological Assessments and a Stage 3 Burial Investigation were conducted and recommended that no further archaeological assessments of the property are necessary. In addition, there were no identified areas of cultural heritage concern. As the final design does not exceed the original project location boundary, no amendments to the Archaeological Assessments or Heritage Assessment Report are required.

We trust the above table contains sufficient information to confirm that the proposed changes to the above reference REA are considered minor. If additional information or clarification is required, please do not hesitate to contact me.

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The Noise Impact Study (prepared by GL Garrad Hassan, dated August 12, 2011) will be updated to reflect the current project layout and submitted as part of the REA Amendment Report.

Sincerely,

Grace Pasceri, Permitting Manager
Canadian Solar Solutions Inc.
545 Speedvale Avenue West
Guelph, ON N1K 1E6
Tel: 519-837-1881 ext. 2293
Grace.pasceri@canadiansolar.com

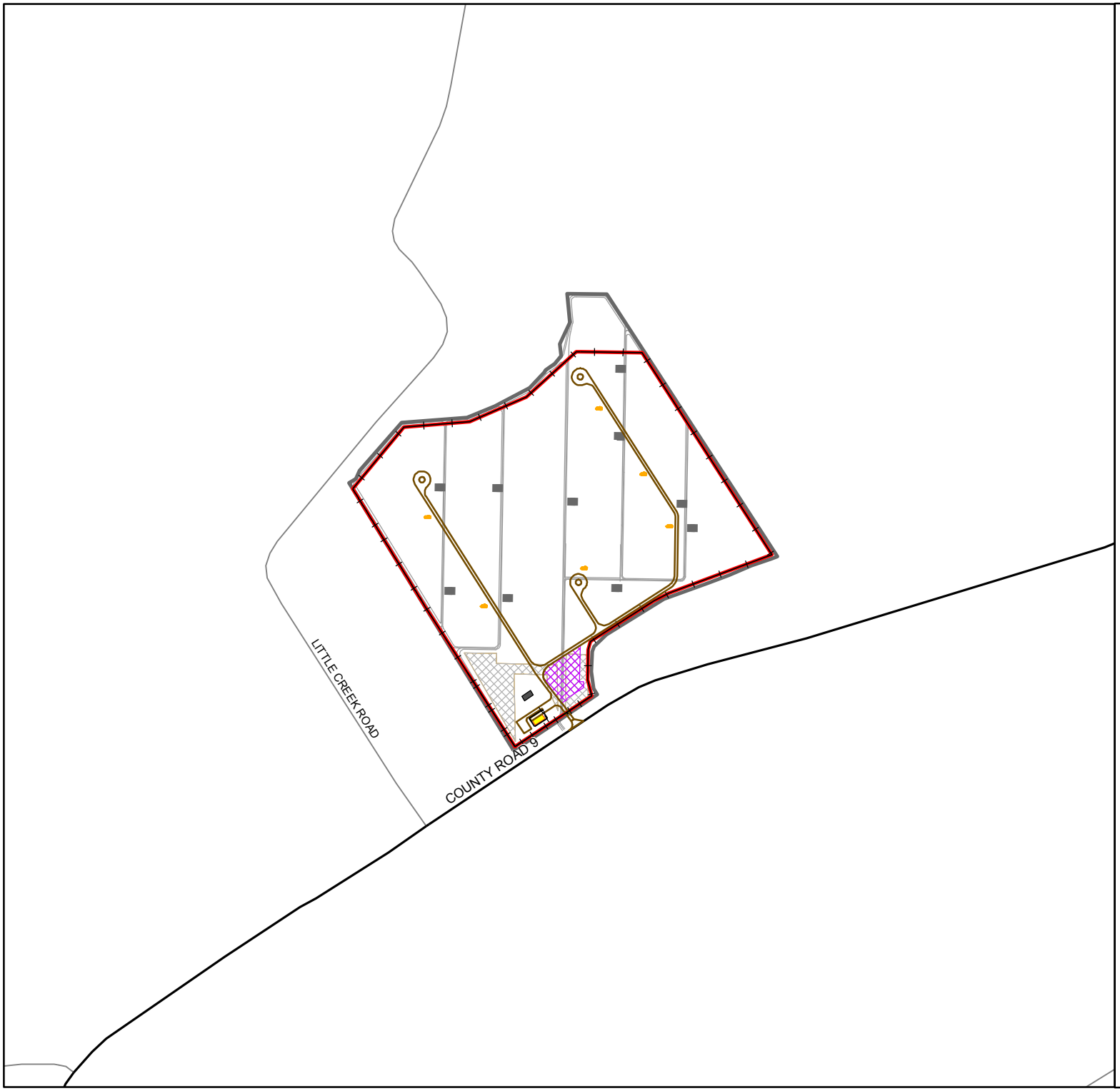
Attachments: Figure 1: Comparison of Project Components

Copies to:

Nick Colella, Project Evaluator

Mohsen Keyvani, Senior Waste Engineer

Vic Schroter, Director, Section 47.5 *Environmental Protection Act*



CanadianSolar

Little Creek
Figure 1:
Comparison of Preliminary and Final Project Site Plan

Legend

- Major Road
- Minor Road

Final Project Components

- Access Road
- Fence
- Project Location
- Substation
- Inverter
- Staging Area

Preliminary Project Components

- Inverter
- Laydown Area
- Project Location
- Access Road
- Substation

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Ministry of the Environment

Environmental Approvals Branch

2 St. Clair Avenue West
Floor 12A
Toronto ON M4V 1L5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement

Direction des autorisations environnementales

2, avenue St. Clair Ouest
Étage 12A
Toronto ON M4V 1L5
Tél : 416 314-8001
Téléc. : 416 314-8452

Ontario

November 1, 2013

Grace Pasceri
Permitting Manager
Canadian Solar Solutions Inc.
e-mail: Grace.Pasceri@canadiansolar.com

Dear Ms. Pasceri:

The Ministry of the Environment (MOE) has reviewed the Little Creek Solar Project REA Amendment Letter dated October 15, 2013 for the Little Creek Solar Project.

In reviewing the amendment letter, the MOE referred to Chapter 10 on making changes to renewable energy projects in the Technical Guide to Renewable Energy Projects, in order to confirm the type of change and determine next steps.

Some of the changes as outlined in the amendment letter require minor revisions to existing Renewable Energy Approval (REA) reports, and a complete update to the Noise Study Report. The changes however; do not have the potential to result in increased environmental effects that are significant. Therefore, the MOE has determined that based on the information provided in the amendment letter, the proposed changes are technical changes.

Proponents proposing technical changes should provide a notice of project change(s) in the form approved by the Director. The notice of proposed change(s) must include the following information:

- OPA Reference Number;
- Name and contact information of the applicant;
- A brief description of the project;
- A map identifying the project location;
- A description of the proposed change(s) and the rationale for the change(s); and
- A description of where information and documentation regarding the proposed change(s) can be located.

The notice must be published and circulated in accordance with subsection 16.0.1 or 32.3, as applicable, of O. Reg. 359/09.

This notification constitutes the minimum requirement, and proponents are encouraged to give copies of the notice to other potentially interested persons or groups, including those that attended public meetings or submitted comments regarding the project. Please also ensure that you provide the MOE with a copy of the notice, and information on how it was distributed, and to whom.

Furthermore, you are required to obtain a re-confirmation letter/email from the Ministry of Natural Resources (MNR) and the Ministry of Tourism, Culture and Sport (MTCS) regarding proposed changes to the project and potential amendments to the natural heritage assessment, archaeological assessment and cultural heritage assessment reports. If in your assessment a re-confirmation letter from the MNR is not required, please provide rational and ensure that you copy the MNR on all your correspondence related to this issue.

2243913 Ontario Corp., as general partner for and on behalf of Little Creek LP must make all revised reports/studies in respect of the proposed change(s) and any new reports/studies prepared in respect to the proposed change(s) available to the public on your website.

Once the requirements have been completed and your REA reports have been revised, you may submit a formal REA amendment application to the MOE.

When the MOE receives the REA amendment application (including all revised documents) we will screen the application to ensure that it includes all of the information the MOE requires for the amendment. When the MOE has completed the review of the amendment application and made a decision on the project, an Information Notice will be posted on the Environmental Registry to inform the public of the change.

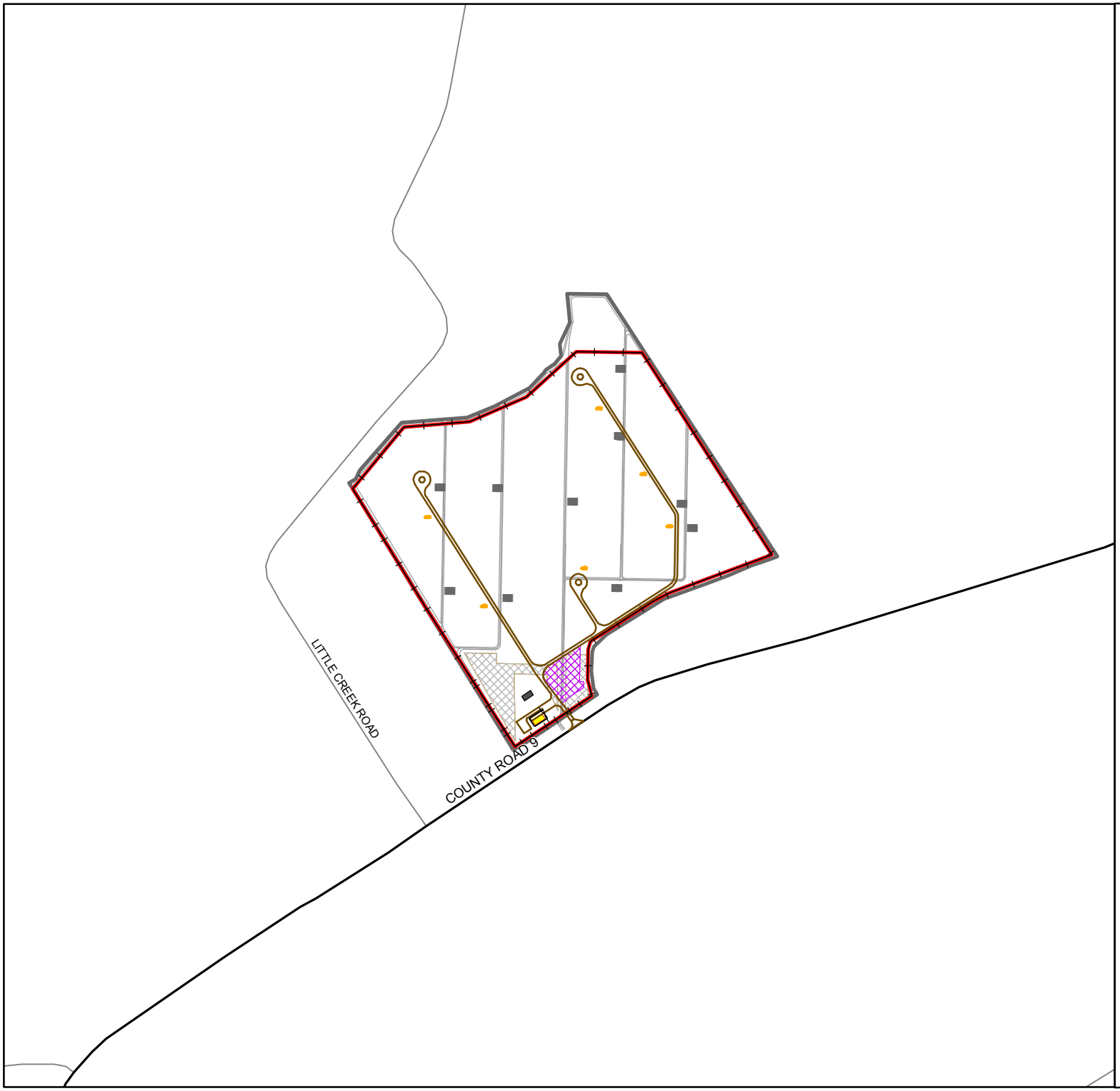
Yours sincerely,

Mohsen Keyvani, P. Eng.
Team 5, Environmental Approvals Branch

c. Kathy Woeller, Supervisor, Southern Region MNR
Joe Halloran, MNR

Appendix C

PROJECT FIGURES



CanadianSolar

Little Creek
Figure 1:
Comparison of Preliminary and Final Project Site Plan

Legend

- Major Road
- Minor Road

Final Project Components

- Access Road
- Fence
- Project Location
- Substation
- Inverter
- Staging Area

Preliminary Project Components

- Inverter
- Laydown Area
- Project Location
- Access Road
- Substation

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DILLON CONSULTING

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Checked By: MB
Date Created: 081213
Date Updated: 081213
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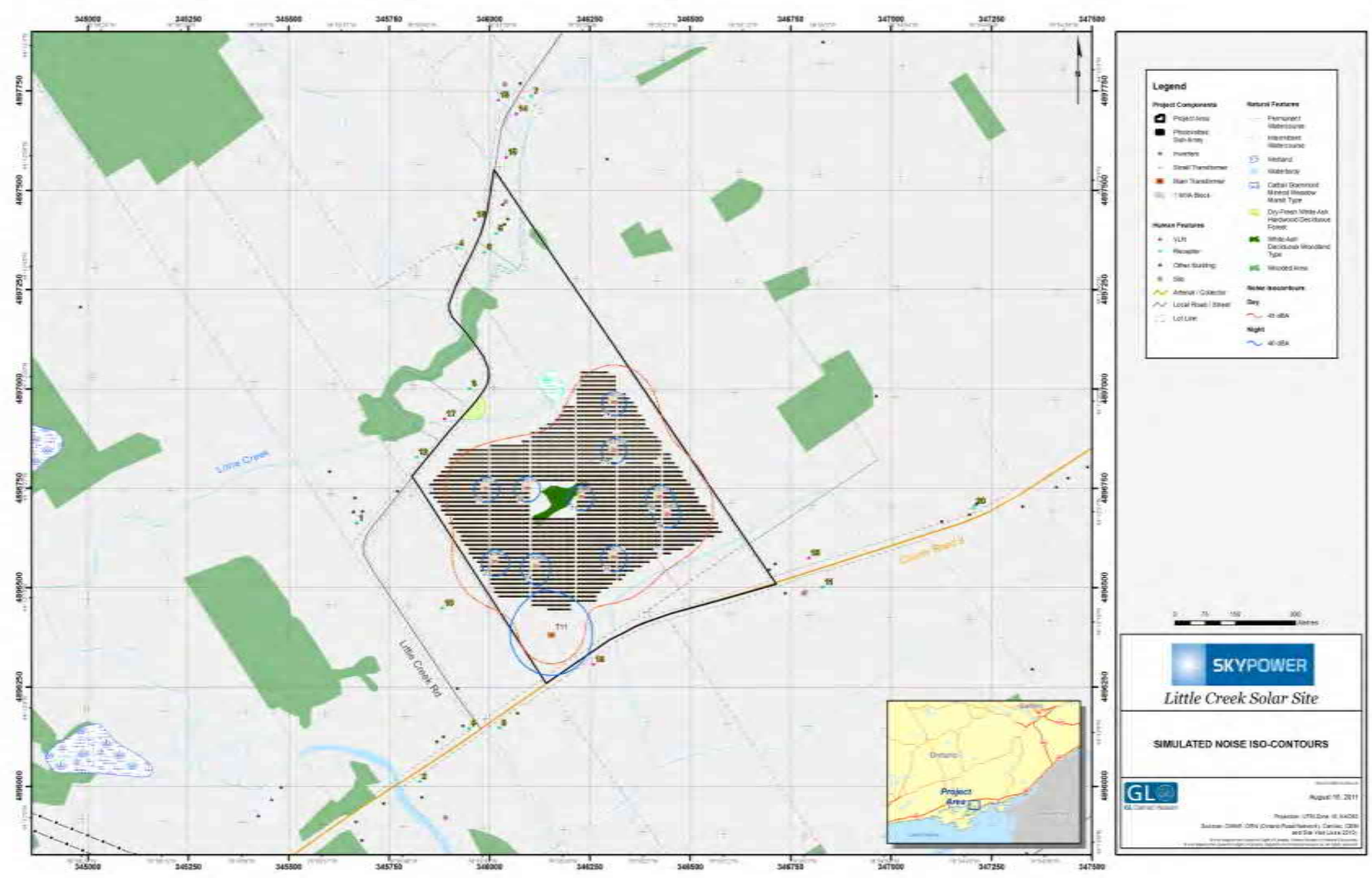
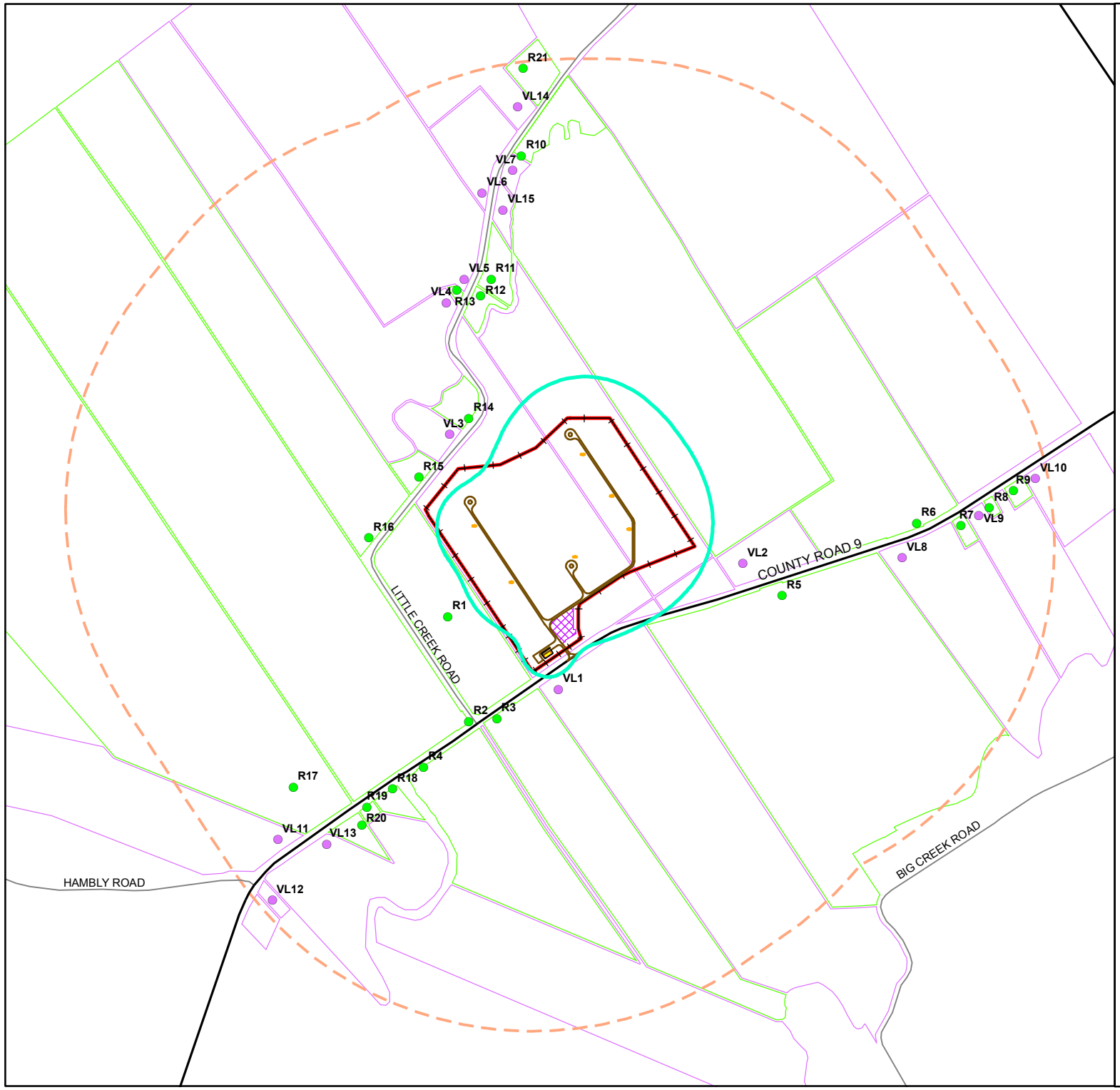
Figure 2: Little Creek Predicted Noise Level Contours at 1.5 and 4.5 m Height (Preliminary layout)





CanadianSolar

Little Creek
Figure 3:
Predicted Noise Level Contours at 1.5 m Height

Legend

- Existing Potential Noise Receptor
- Vacant Lot Receptor
- 40 dBA Noise Contour at 1.5 m
- Major Road
- Minor Road
- 1000 m Project Location Setback
- Occupied Parcel
- Vacant Parcel

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

N
W E
S

1:15,000

0 100 200 300 m

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Date Created: 081213
Date Updated: 081213
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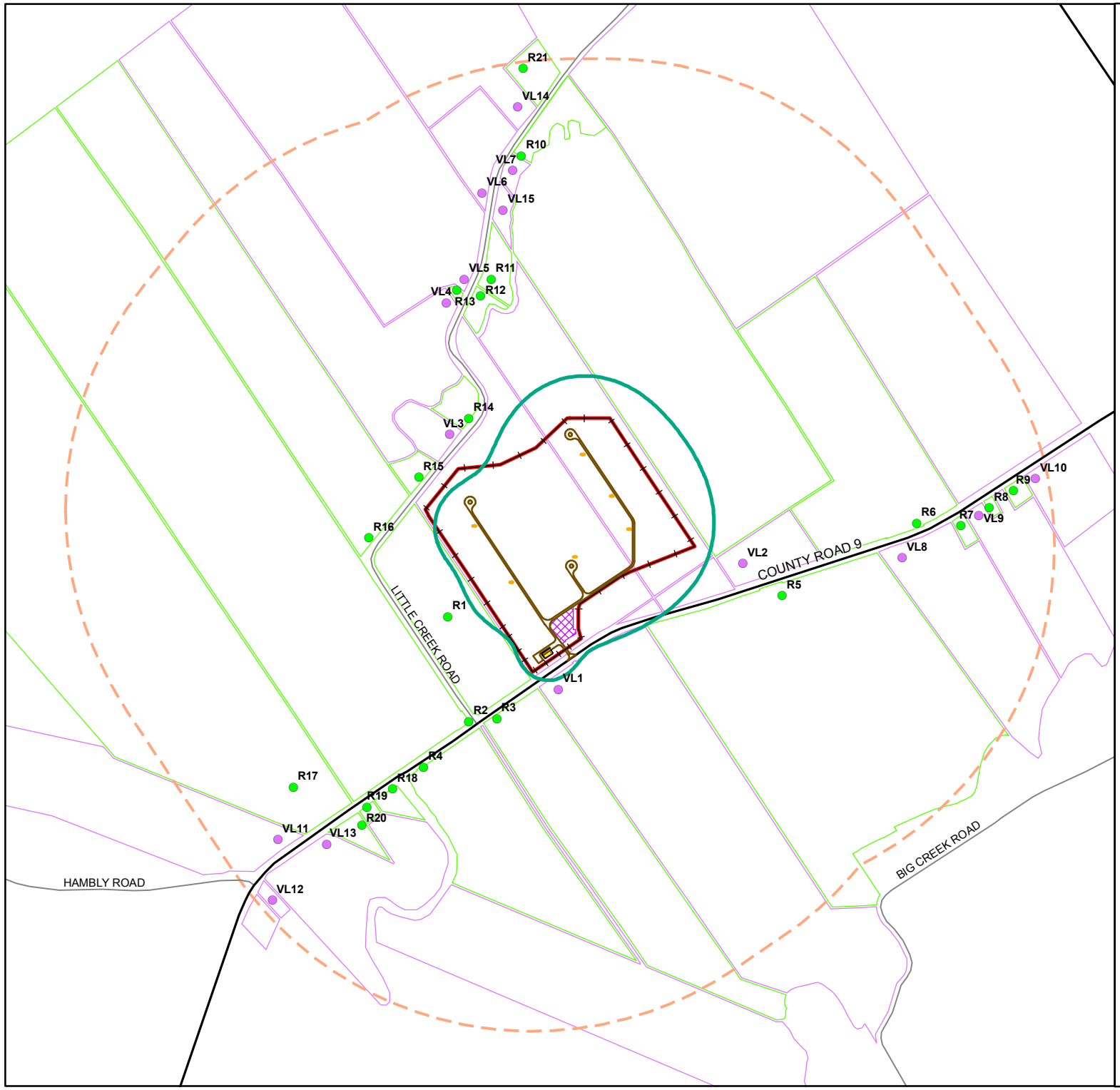

CanadianSolar

Little Creek
Figure 4:
Predicted Noise Level Contours at 4.5 m Height

Legend

- Existing Potential Noise Receptor
- Vacant Lot Receptor
- 40 dBA Noise Contour at 4.5 m Height
- Major Road
- Minor Road
- 1000 m Project Location Setback
- Occupied Parcel
- Vacant Parcel

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

N
W E
S

1:15,000

0 100 200 300 m

DILLON CONSULTING

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Checked By: MB
Date Created: 081213
Date Updated: 081213
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Appendix D

PANELS

CanadianSolar

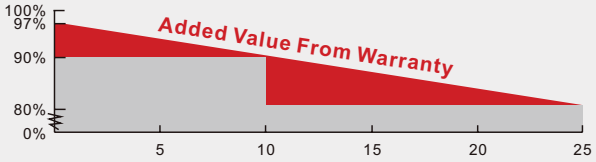
MaxPower CS6X

280/285/290/295/300P

MaxPower CS6X is a robust solar module with 72 solar cells. These modules can be used for on-grid solar applications. Our meticulous design and production techniques ensure a high-yield, long-term performance for every module produced. Our rigorous quality control and in-house testing facilities guarantee Canadian Solar's modules meet the highest quality standards possible.

Key Features

- High module efficiency up to 15.63%
- Positive power tolerance: 0 ~ +5W
- Robust frame to up to 5400 Pa load
- Anti-reflective and self-cleaning surface
- Outstanding performance at low irradiance
- High energy yield at Low NOCT
- **Backed By Our New 10/25 Linear Power Warranty Plus our added 25 year insurance coverage**



- 10 year product warranty on materials and workmanship
- 25 year linear power output warranty

Best Quality

- 235 quality control points in module production
- EL screening to eliminate product defects
- Current binning to improve system performance
- Accredited Salt mist resistant

Best Warranty Insurance

- 25 years worldwide coverage
- 100% warranty term coverage
- Providing third party bankruptcy rights
- Non-cancellable
- Immediate coverage
- Insured by 3 world top insurance companies

Comprehensive Certificates

- IEC 61215 / IEC 61730, UL 1703, IEC61701 ED2, KEMCO, CEC Listed, CE, MCS
- ISO9001: 2008: Quality Management System
- ISO/TS16949:2009: The automotive quality management system
- ISO14001:2004: Standards for Environmental management system
- QC080000 HSPM: The Certification for Hazardous Substances Regulations
- OHSAS 18001:2007 International standards for occupational health and safety
- Reach Compliance

www.canadiansolar.com

CS6X-280/285/290/295/300P
MaxPower

Electrical Data

STC	CS6X-280P	CS6X-285P	CS6X-290P	CS6X-295P	CS6X-300P
Nominal Maximum Power (Pmax)	280W	285W	290W	295W	300W
Optimum Operating Voltage (Vmp)	35.6V	35.8V	35.9V	36.0V	36.1V
Optimum Operating Current (Imp)	7.86A	7.96A	8.08A	8.19A	8.30A
Open Circuit Voltage (Voc)	44.2V	44.3V	44.4V	44.5V	44.6V
Short Circuit Current (Isc)	8.42A	8.53A	8.64A	8.76A	8.87A
Module Efficiency	14.59%	14.85%	15.11%	15.37%	15.63%
Operating Temperature	-40℃~+85℃				
Maximum System Voltage	1000V (IEC) /600V (UL)				
Maximum Series Fuse Rating	15A				
Application Classification	Clase A				
Power Tolerance	0 ~ +5W				

Under Standard Test Conditions (STC) of irradiance of 1000W/m^2, spectrum AM 1.5 and cell temperature of 25℃

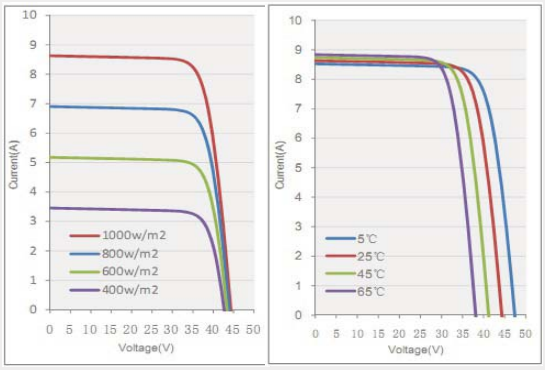
NOCT	CS6X-280P	CS6X-285P	CS6X-290P	CS6X-295P	CS6X-300P
Nominal Maximum Power (Pmax)	203W	207W	210W	214W	218W
Optimum Operating Voltage (Vmp)	32.5V	32.7V	32.7V	32.8V	32.9V
Optimum Operating Current (Imp)	6.25A	6.33A	6.42A	6.51A	6.61A
Open Circuit Voltage (Voc)	40.6V	40.7V	40.8V	40.9V	41.0V
Short Circuit Current (Isc)	6.82A	6.91A	7.00A	7.10A	7.19A

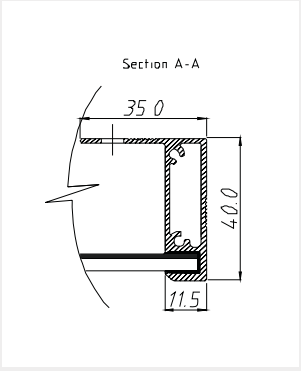
Under Normal Operating Cell Temperature, Irradiance of 800 W/m^2, spectrum AM 1.5, ambient temperature 20℃, wind speed 1 m/s

Mechanical Data

Cell Type	Poly-crystalline 156 x 156mm, 2 or 3 Busbars
Cell Arrangement	72 (6 x 12)
Dimensions	1954 x 982 x 40mm (76.93 x 38.7 x 1.57in)
Weight	23kg (50.7 lbs)
Front Cover	3.2mm Tempered glass
Frame Material	Anodized aluminium alloy
J-BOX	IP65, 3 diodes
Cable	4mm^2(IEC)/12AWG(UL), 1150mm
Connectors	MC4 or MC4 Comparable
Standard Packaging (Modules per Pallet)	24pcs
Module Pieces per container (40 ft . Container)	528pcs (40'HQ)

I-V Curves (CS6X-290P)





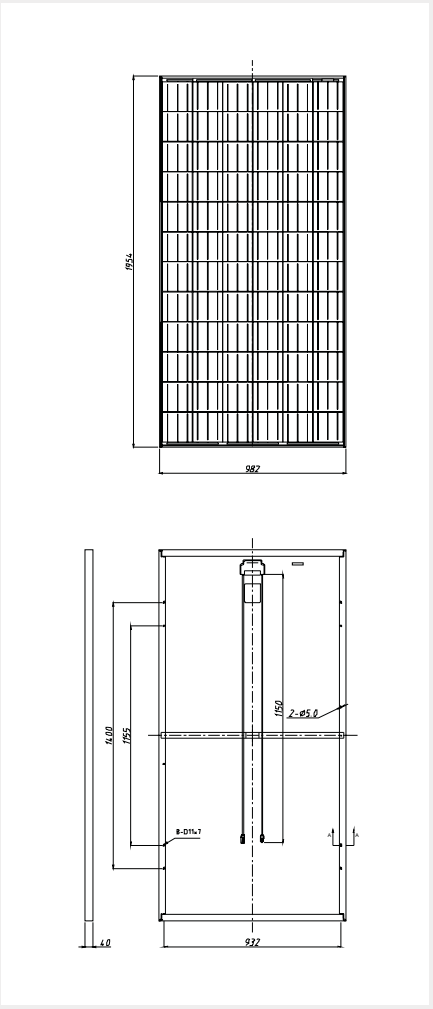
Temperature Characteristics

Temperature Coefficient	Pmax	-0.43%/℃
	Voc	-0.34 %/℃
	Isc	0.065 %/℃
Normal Operating Cell Temperature		45±2℃

Performance at Low Irradiance

Industry leading performance at low irradiation environment, +95.5% module efficiency from an irradiance of 1000w/m^2 to 200w/m^2 (AM 1.5, 25 ℃)

Engineering Drawings



*Specifications included in this datasheet are subject to change without prior notice.

About Canadian Solar

Canadian Solar Inc. is one of the world's largest solar companies. As a leading vertically-integrated manufacturer of ingots, wafers, cells, solar modules and solar systems, Canadian Solar delivers solar power products of uncompromising quality to worldwide customers. Canadian Solar's world class team of professionals works closely with our customers to provide them with solutions for all their solar needs.

Canadian Solar was founded in Canada in 2001 and was successfully listed on NASDAQ Exchange (symbol: CSIQ) in November 2006. Canadian Solar has module manufacturing capacity of 2.05GW and cell manufacturing capacity of 1.3GW.

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Guelph | Ontario N1K 1E6 | Canada
Tel: +1 519 837 1881
Fax: +1 519 837 2550
inquire.ca@canadiansolar.com
www.canadiansolar.com

Appendix E

INVERTER STATIONS

Economical

- Savings in balance of system costs due to 1,000 V operating voltage
- Outdoor enclosure allows for direct field deployment
- Small footprint and light weight for easy shipping and installation

Efficient

- Highest efficiency in its power class
- Full nominal power at ambient temperatures up to 50 °C
- 10% additional power for continuous operation at ambient temperatures up to 25 °C

Flexible

- Configurable DC voltage range
- Integrated AC disconnect for NEC 2011 compliance
- Optional DC disconnects

Reliable

- Easy and safe installation and with large, separate connection area
- Powerful grid management functions (incl. LVRT and Frequency Ride Through)
- Full UL1741 and IEEE 1547 compliance

SUNNY CENTRAL
500CP-US / 630CP-US / 720CP-US / 750CP-US / 800CP-US

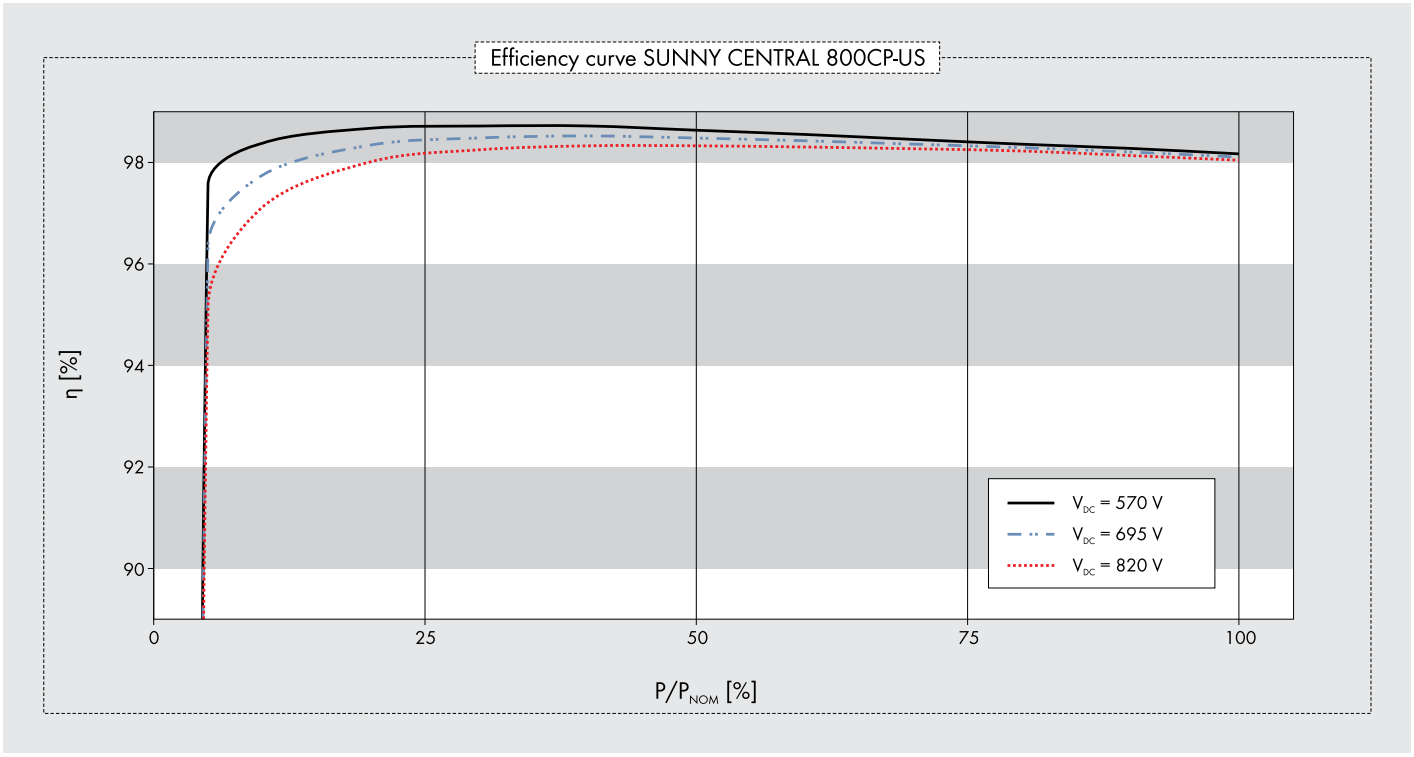
UL listed for commercial and utility-scale projects

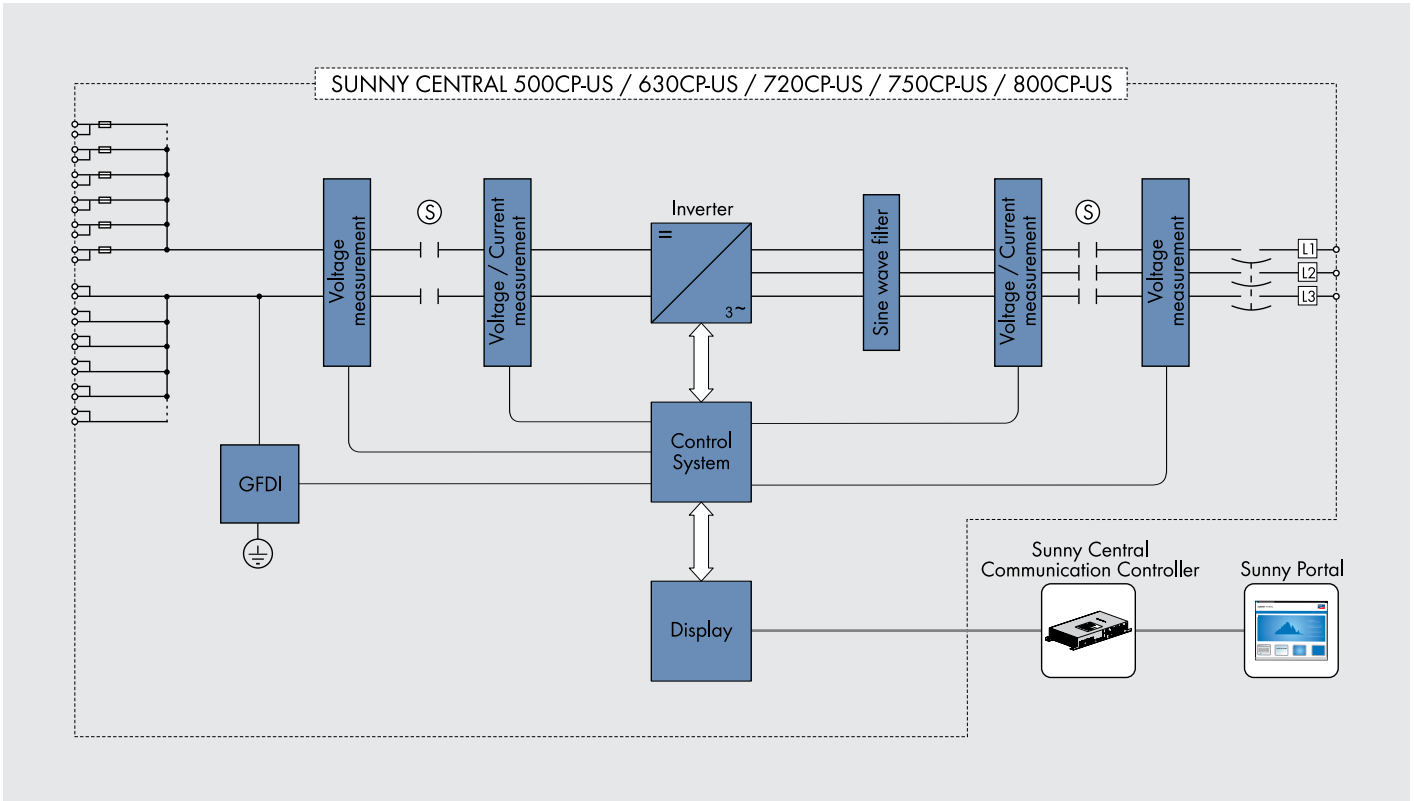
The Sunny Central CP-US series delivers outstanding performance. In combination with an external transformer, the Sunny Central CP-US can be connected to any utility grid or three-phase commercial service while directly providing grid management functions. The CP-US family is UL listed at 1,000 V DC and features an integrated AC disconnect in accordance with NEC 2011 requirements. Both the outdoor enclosure with the OptiCool™ cooling concept and the separate connection area ensures simple installation while maximizing returns. With a peak efficiency of 98.7 percent, it outperforms all other inverters in its class. The Sunny Central CP-US can also be integrated with the Power Plant Controller as well as the Medium-voltage Power Platform for utility-scale applications.

Technical data	Sunny Central 500CP-US	Sunny Central 630CP-US
Input (DC)		
Max. DC power (@ cos φ = 1)	560 kW	713 kW
Max. input voltage[1]	1000 V	1000 V
MPP voltage range (@ 25 °C / @ 50 °C at 60 Hz)	430 V – 820 V / 430 V – 820 V [1,2]	500 V – 820 V / 500 V – 820 V [1,2]
Rated input voltage	480 V	550 V
Max. input current	1250 A	1350 A
Min. input voltage / V_{MPP_min} at $I_{MPP} < I_{DCmax}$	429 V	498 V
Number of independent MPP inputs	1	1
Number of DC inputs	1; 6 – 9	1; 6 – 9
Output (AC)		
Rated power (@ 25 °C) / nominal AC power (@ 50 °C)	550 kVA / 500 kVA	700 kVA / 630 kVA
Rated grid voltage / nominal AC voltage range	270 V / 243 V – 297 V	315 V / 284 V – 347 V
AC power frequency / range	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz
Rated power frequency / rated grid voltage	50 Hz, 60 Hz / 270 V	50 Hz, 60 Hz / 315 V
Max. output current	1176 A	1283 A
Max. total harmonic factor	< 3 %	< 3 %
Power factor at rated power / displacement power factor adjustable	1 / 0.8 leading – 0.8 lagging	
Feed-in phases / connection phases	3 / 3	3 / 3
Efficiency[3]		
Max. efficiency / European weighted efficiency / CEC efficiency	98.5 % / 98.3 % / 98.0 %	98.5 % / 98.3 % / 98.0 %
Protective devices		
DC disconnect device	DC contactor	
AC disconnect device	AC circuit breaker	
DC overvoltage protection	Surge Arrester Type II	
Grid monitoring	●	●
Ground-fault monitoring	o	o
Ungrounded PV array[4]	o	o
Lightning protection	Lightning protection level III	Lightning protection level III
Insulation monitoring	o	o
Surge arresters for auxiliary power supply	●	●
Protection class / overvoltage category	I / IV	I / IV
General data		
Dimensions (W / H / D)	2562 / 2279 / 956 mm (101 / 90 / 38 inches)	
Weight	1800 kg / 4000 lb	1800 kg / 4000 lb
Operating temperature range	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F
Noise emission[5]	60 db(A)	60 db(A)
Max. self-consumption (in operation) / self-consumption (at night)[6]	1700 W / < 100 W	1700 W / < 100 W
External auxiliary supply voltage	230 / 400 V (3/N/PE)	230 / 400 V (3/N/PE)
Cooling concept	OptiCool	OptiCool
Degree of protection: electronics / connection area	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R
Degree of protection	4C2, 4S2	4C2, 4S2
Application	In unprotected outdoor environments	In unprotected outdoor environments
Max. permissible value for relative humidity (non-condensing)	15 % ... 95 %	15 % ... 95 %
Max. operating altitude above mean sea level	2000 m	2000 m
Fresh-air consumption (inverter)	3000 m³/h	3000 m³/h
Features		
DC connection	Ring terminal lug / cage clamp	Ring terminal lug / cage clamp
AC connection	Ring terminal lug / cage clamp	Ring terminal lug / cage clamp
Display	o	o
Communication / protocols	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus
Communication with Sunny String-Monitor	RS485	RS485
Transformer for auxiliary power supply	o	o
SC-COM	●	●
Color of enclosure, door, base, roof	RAL 9016 / 9016 / 7005 / 7004	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / o / o / o / o	● / o / o / o / o
Certificates and approvals (more available on request)	EMC conformity according to FCC, Part 15, Class A, UL 1741, UL 1998, IEEE 1547	
● Standard equipment o Optional features – Not available		
Type designation	SC 500CP-US-10	SC 630CP-US-10

Sunny Central 720CP-US	Sunny Central 750CP-US	Sunny Central 800CP-US	
808 kW	853 kW	898 kW	
1000 V	1000 V	1000 V	
525 V – 820 V / 525 V – 820 V [1,2]	545 V – 820 V / 545 V – 820 V [1,2]	570 V – 820 V / 570 V – 820 V [1,2]	
565 V	595 V	620 V	
1600 A	1600 A	1600 A	
515 V	545 V	568 V	
1	1	1	
1; 6 – 9	1; 6 – 9	1; 6 – 9	
792 kVA / 720 kVA	825 kVA / 750 kVA	880 kVA / 800 kVA	
324 V / 292 V – 356 V	342 V / 308 V – 376 V	360 V / 324 V – 396 V	
50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz	50 Hz, 60 Hz / 47 Hz ... 63 Hz	
50 Hz, 60 Hz / 324 V	50 Hz, 60 Hz / 342 V	50 Hz, 60 Hz / 360 V	
1411 A	1411 A	1411 A	
< 3 %	< 3 %	< 3 %	
1 / 0.8 leading – 0.8 lagging			
3 / 3	3 / 3	3 / 3	
98.6 % / 98.4 % / 98.0 %	98.6 % / 98.4 % / 98.0 %	98.7 % / 98.4 % / 98.5 %	
DC contactor			
AC circuit breaker			
Surge Arrester Type II			
●	●	●	
○	○	○	
○	○	○	
Lightning protection level III	Lightning protection level III	Lightning protection level III	
○	○	○	
●	●	●	
I / IV	I / IV	I / IV	
2562 / 2279 / 956 mm (101 / 90 / 38 inches)			
1800 kg / 4000 lb	1800 kg / 4000 lb	1800 kg / 4000 lb	
-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F	-25 °C ... +50 °C / -13 °F ... +122 °F	
60 db(A)	60 db(A)	61 db(A)	
1700 W / 100 W	1700 W / < 100 W	1700 W / < 100 W	
230 / 400 V (3/N/PE)	230 / 400 V (3/N/PE)	230 / 400 V (3/N/PE)	
OptiCool	OptiCool	OptiCool	
NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	NEMA 3R / NEMA 3R	
4C2, 4S2	4C2, 4S2	4C2, 4S2	
In unprotected outdoor environments	In unprotected outdoor environments	In unprotected outdoor environments	
15 % ... 95 %	15 % ... 95 %	15 % ... 95 %	
2000 m	2000 m	2000 m	
3000 m³/h	3000 m³/h	3000 m³/h	
Ring terminal lug / cage clamp	Ring terminal lug / cage clamp	Ring terminal lug / cage clamp	
Ring terminal lug / cage clamp	Ring terminal lug / cage clamp	Ring terminal lug / cage clamp	
○	○	○	
Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus	Ethernet (optical fiber optional), Modbus	
RS485	RS485	RS485	
○	○	○	
●	●	●	
RAL 9016 / 9016 / 7005 / 7004			
● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	
EMC conformity according to FCC, Part 15, Class A, UL 1741, UL 1998, IEEE 1547			
SC 720CP-US-10	SC 750CP-US-10	SC 800CP-US-10	

[1] At 1.00 $U_{AC, nom}$ and cos φ = 1
[2] The inverter will track MPP to 850V before self-protecting
[3] Measured efficiency includes all auxiliary power
[4] Included in the inverter's UL listing
[5] Sound pressure level at a distance of 10 m
[6] Self-consumption at rated operation





Toll Free +1 888 4 SMA USA
www.SMA-America.com

SMA America, LLC

Appendix F

SUBSTATION

VIRGINIA TRANSFORMER CORP

220 Glade View Drive,
Roanoke, VA 24012
Ph. 540.345.9892
www.vatransformer.com

Proposal X131101A Rev. 1 Date: 7/19/2013

Prepared For JUWI Little Creek Solar Facility

Attn: William Sanders, William.Sanders@rmtinc.com

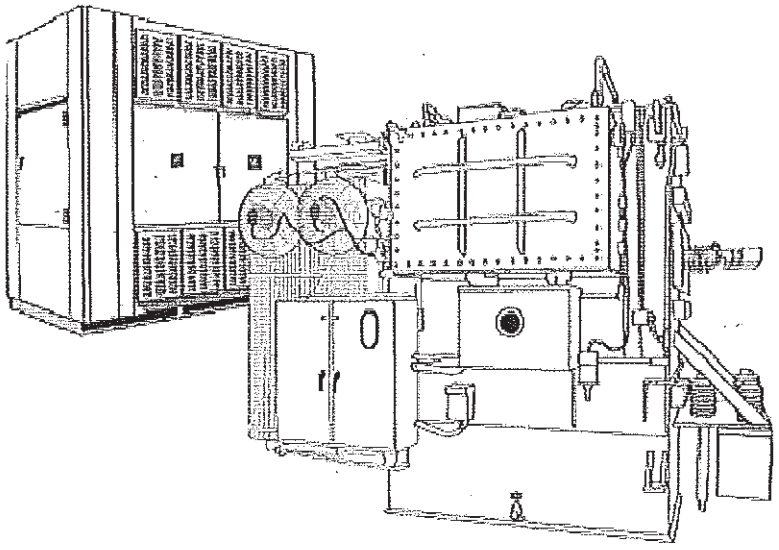
VTC Contact: Larry Horne, Larry_Horne@vatransformer.com
Ph: 540-345-9892 Ext 213

Description 7500/10000 MVA Step -up Transformer

For over 40 years, innovative technology and a commitment to superior customer service and support have established Virginia Transformer Corporation (VTC) as an engineering company leading in manufacturing a verity of Transformers.

VTC designs and manufactures custom power transformers ranging from 300 KVA to 300 MVA, 230 kV class, both liquid-filled and dry-type units.

VTC has design and manufacturing facilities in Roanoke, VA; Pocatello, ID and Chihuahua, Mexico. In addition, VTC has design and procurement capabilities in Delhi, India - establishing a world-wide presence as a supplier of transformer solutions. VTC reserves the right to manufacture the product quoted herein at any of these plants.



PROPOSAL SUMMARY

Option: 1 FR3 Fluid

ITEM	DESCRIPTION	QTY	UNIT PRICE	EXTENDED PRICE
1	7500 / 10000 KVA	01		

Option: 2 Mineral Oil

ITEM	DESCRIPTION	QTY	UNIT PRICE	EXTENDED PRICE
1	7500 / 10000 KVA	01		0

The Firm price offer is for shipment by 9/20/2013 and order by 4/19/2013. If shipment is delayed for customer reason, the price will be increased at a rate of 1.0% per month effective the first day after the shipment date expires. The validity of Index Price offer expires 12 months from the date of original proposal.

SHIPPING INFORMATION	
Validity of Quotation	8/19/2013
Shipment By	11/15/2013
F.O.B.	Destination
Freight	DAP Greater Napanee, Ontario, Canada

PAYMENT TERMS
20% with acknowledgement of P.O.
30% with Approval Drawing Submittal, Net 30 days
50% invoiced at time of shipment, Net 30 days

VA Transformer: Accounting, Phone: 540-345-9892, E-mail:accounting@vatransformer.com

NOTES

1. All prices are excluding any State, Federal, Sales or Use Tax.
2. Written Purchase Orders are required prior to any Engineering, Manufacturing, or Order Entry by VTC. The stated delivery date contained in this proposal is predicated on the factory loading at the time of quotation. The actual delivery date will only be confirmed at the time an order is received. Our acknowledgement will confirm the committed shipment date. Virginia Transformer Corp. reserves the option to ship this unit within a window of four to six (4 to 6) weeks prior to the date requested on the purchase order.
3. Access to final site and all access roads leading thereto must be suitable for un-impeded delivery by special, heavy-duty trucks carrying large transformers, including grades, turning radii, and surface conditions capable of supporting the combined weight of these trucks and transformers.

   VTC will include its standard O&M manual with a Final, As-Built package of drawings and cat cuts of the devices. Reference VTC website for a sample copy of our standard O&M manual (www.vatransformer.com > Brochures & White Papers > Liquid Filled Installation and Operation).

This proposal is Virginia Transformer's complete understanding of the specification requirements provided, and is the basis for acceptance of any resulting orders. The table below describes the salient ratings of the transformer(s) in the proposal:

ITEM #1

TECHNICAL SPECIFICATION:

ITEM #1	QUANTITY #1		
KVA	7500 / 10000	**Application**	Generator step-up
Cooling Class	KNAN / KNAF	**Winding Temp Rise (AVG)**	65°C
# Phases	3	**Dielectric Fluid**	Envirotemp FR3
Frequency (Hertz)	60	**Conductor Material**	Copper
HV Rating(V)	44000 Delta	**LV Rating(V)**	27600 GrdY / 15935
HV BIL(kV)	250	**LV BIL(kV)**	200
LV Taps	2 FCAN, 2 FCBN @ 2.50 %	**Nom. Impedance**	5.75 %; ±7.50% @7500 KVA 7.5%; @ 10000KVA
HV Bushing Mounting	Segment III, Cover Mounted	**LV Bushing Mounting**	Segment I, Cover Mounted
HV Terminal Chamber	NA	**LV Terminal Chamber**	NA
Radiators	Hot dip Galvanized unpainted w/Valve	**Paint Color / Type**	70 / III Polyamide Epoxy Over urethane
Losses	Guaranteed Max per ANSI Tolerance	**Coil Type**	CIRCULAR
No Load Losses	7 kW at 100% volts	**Load Losses**	30 kW @ 7500 KVA

TANK FEATURES:

1. De-energized Manual No Load Tap Changer
2. Diagrammatic Name Plate
3. Gasketed Manhole in Cover
4. Panel Type Radiators
5. Sealed Tank with Dry Nitrogen Blanket
6. Two Stainless Steel Ground Pads welded to Base on Diagonally Opposite Corners
7. Welded Top Cover

STANDARD GAUGES AND ADDITIONAL FIXTURES / ACCESSORIES

Gauge Details
Liquid Temperature Gauge with contacts
Pressure Vacuum Gauge & Bleeder
Liquid Level Gauge with Contacts
Pressure Relief Device with Flag & contacts
Simulated Winding Temperature Gauge with contacts
Sudden Pressure Relay – GAS and OIL
Seal in Relay
RTD for main tank

Note: Unless otherwise stated, all gauges and accessories shall be of VTC preferred provision.

BUSHINGS, CURRENT TRANSFORMERS AND LIGHTNING ARRESTERS

Details of Bushings:

Bushing	BIL	Location	Quantity/Phase	Make
HV	250	Segment III	1	VTC STD
LV	200	Segment I	1	VTC STD

Details of Current Transformers:

Location	Quantity/Phase	CT Radio	Single Ratio / Multi Ratio	Class / Accuracy
HV*	1	600:5	MR	0.3B2.0
LV	1	600:5	MR	C400
LV Neutral	1	600:5	MR	C400

*See the clarifications

Details of Arresters*:

Location	KV Class	MCOV	Class	Manufacturer
HV	46	42 kV	Station Class	VTC STD
LV	27	22 kV	Station Class	VTC STD

***VTC has quoted for Polymer station class arresters and not porcelain.**

Radiators

VTC standard radiators are Hot Dipped Galvanized and do not require painting. These radiators are suitable for all climatic conditions that include chemical, petro-chemical and marine conditions. Unless specified differently below, these standard, galvanized radiators will be provided.

Radiators included in this quoted transformer - Standard per above	
Demount	Hot Dipped Galvanized

TESTING:

1. Routine.
2. Impulse.
3. DGA.
4. Power factor.

AMBIENT CONDITIONS:

Ambient Temperature (*C)	Min. -20 / Av. 25 / Max. 40
Seismic Zone	Zone 1 & 2
Altitude (Feet)	≤3300 ft.
Sound Level	STD NEMA TR-1

SHIPPING & HANDLING DETAILS:

[A] Shipping & Overall Dimensions:		
Dimension	**Overall Dimensions(Inches)**	**Shipping Dimensions (Inches)**
Width	134	128.38
Depth	127	123.30
Height	155	152.88

[B] Shipping & Estimated Weight:	
Estimated Weight of the Unit (Lbs)	**Approximate Shipping Weight (Lbs)**
51,000	51,100

Remarks:

1. The above dimensions are approximate.

[C] Parts to be shipped separately:

None

Note: Assembly of ship separate parts is by others unless Value Added Options for installation services are included.

SUGGESTED SPARE PARTS:

Suggested Spare Parts	
Particulars	**Price ($)**
GASKET SET	
FANS	
HV BUSHINGS	
LV BUSHINGS	

VALUE ADDED OPTIONS

Standard Warranty 12/18 Months	Included
Extended Warranty 60/60 Months	Included
Test Witness Option	
Field Service: Unloading, Installation (make up-oil) and Filed Testing	
Impact Recorder	
VTC Final As-Built Package (FABP)	With Order
Final as-built Drawings	With FABP
Operation & Maintenance Manual	With Shipment/FABP
Catalog cuts for components	With Drawings/FABP
Spare parts price list for five-year operation	With FABP

CLARIFICATIONS/EXCEPTIONS TO THE SPECIFICATION

- VTC had assumed impedance 5.75% @ 7500KVA for this quote and 7.50% @ 10000KVA
- VTC has quoted for 600:5A, 0.3B2.0 accuracy class instead of 600:5, 0.15B1.8. See the CT Details.
- VTC has provided NEMA 3R control cabinet without Stainless steel.
- VTC takes exception for the clause 4.2.10 (Power factor not exceeding 0.5%).

Quote JUWI

No Load Loss (KW)	7	
KVA Rating	7500	
Load Loss at Reference Temp (KW)	30	
Impedance	5.75	%

Regulation Calculation

%R	0.40000	
%X	5.73607	

	PF	SinY	
Power Factor	1	0	0.56451
	1	0.00	0.56451

Efficiency Calculation at Various Percent of Load

		Power Factor	
		1	1
125%	1.25	99.43	99.43
100%	1.00	99.51	99.51
75%	0.75	99.58	99.58
50%	0.50	99.61	99.61
25%	0.25	99.53	99.53

X/R Ratio

14.34

Load Loss at Various Percent of Load

125%	1.25	46.88
100%	1.00	30.00
75%	0.75	16.88
50%	0.50	7.50
25%	0.25	1.88

9. DATA TO BE SUBMITTED WITH BID

1. Transformer Dimensions:
   a. Shipping: H: 153" W: 128" D: 123"
   b. Assembled: H: 155" W: 134" D: 127"
   c. Will transformer be shipped with the radiators installed? YES

2. Weight:
   a. Shipping 51,100 pounds
   b. Assembled 51,100 pounds

3. Oil:
   a. Type FR3 / OPTION - MINERAL OIL
   b. Volume 1780 gallons
   c. Will transformer be shipped with oil? YES

4. Transformer data:
   a. Manufacturer VIRGINIA TRANSFORMER CORP
   b. Type GSU
   c. Temperature rise 65° C.
   d. HV side voltage 44 KV DELTA
   e. LV side voltage 27.6 KV GRDY
   f. Winding material COPPER
   g. Winding type DISC / HELICAL
   h. Vector group
   i. Impulse withstand voltage (BIL)
      - HV side winding 250 BIL
      - LV side winding 200 BIL
      - Neutral winding 200 BIL
      - HV side bushing SEE PROPOSAL
      - LV side bushing "
      - Neutral bushing "
   j. Impedance at 10MVA 7.5% ± 7.5%
   k. X/R ratio 14.34
   l. Losses
      - No load 7 KW
      - Load 30 KW
      - Auxiliary 2 KW

5. Manufacturing Location ROANOKE, VA

CIMA

6. Schedule:

a. Drawing lead time ARO	3-4 WKS	weeks
b. Available witnessing points ARO	9-10	weeks
c. Testing ARO	12-13	weeks
d. Shipping ARO	14-15	weeks

7. Warranty 60/60 INCLUDED

CIMA

Appendix G

NOISE STUDY REPORT

UTM Coordinates – Noise Sources

Noise Source ID	Centre of Cluster – UTM Coordinates (NAD 83)	
	X (m)	Y (m)
INV1	346272	4896894
INV2	346353	4896779
INV3	346401	4896687
INV4	346250	4896610
INV5	345970	4896696
INV6	346073	4896539
INVTR1	346277	4896894
INVTR2	346357	4896779
INVTR3	346405	4896687
INVTR4	346255	4896610
INVTR5	345974	4896696
INVTR6	346078	4896539
Substation (TRS)	346175	4896339

WHITE
an IEA company

Little Creek
Solar Project

Little Creek Solar

REVISED NOISE STUDY REPORT

DILLON
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Table of Contents

List of Figures

List of Tables

Appendices

1. Introduction

Little Creek LP proposes to develop a solar facility with a maximum name plate capacity of approximately 8.5 megawatts (MW) alternating current (AC), located in the geographic Township of North Fredericksburg, in the town of Greater Napanee, Ontario. The renewable energy facility will be known as the Little Creek Solar Project ("Little Creek") and will be rated as a Class 3 Solar Facility. Canadian Solar Solutions Inc. is coordinating and managing the approvals process for Little Creek LP. Little Creek LP has received a contract from the Ontario Power Authority (OPA) for the sale of electricity generated by this renewable facility through the province's Feed-in-Tariff (FIT) program (enabled by the *Green Energy and Green Economy Act,* 2009). The project received a Renewable Energy Approval (REA) from the Ministry of the Environment (MOE) on January 25, 2013 as per *Ontario Regulation 359/09* under Part V.0.1 of the *Ontario Environmental Protection Act.* The REA was subsequently amended and approved by the MOE on July 31, 2013. The amendments did not affect the *Noise Study Report* previously submitted as part of the original REA application.

This Noise Study Report (NSR) is being submitted to the Ministry of the Environment as a result of amendments proposed for the project, namely the relocation and decrease in number of inverter stations. This assessment documents the compliance of all the proposed noise sources at Little Creek with MOE Publication *NPC-232 Sound Level Limits for Stationary Sources in Class 3 Areas (Rural).*

2. The Proponent

Canadian Solar Solutions Inc. is coordinating and managing the approvals process for Little Creek LP. Company activities include developing, managing, financing and owning renewable energy facilities. In the course of developing renewable energy projects, Little Creek LP complies with various environmental approval requirements and obtains regulatory approvals that vary depending on the jurisdiction, project capacity and site location. In addition, Little Creek LP and Canadian Solar Solutions Inc. are building long-term relationships with the communities that host their projects.

Contact information for the proponent is as follows:

Full Name of Company:	*Little Creek LP*
Prime Contact	*Grace Pasceri*
Address:	*545 Spadina Ave. W., Guelph, Ontario N1K 1E6*
Telephone:	*519-837-1881 x 2293*
Fax:	*519-837-2550*
Email:	*Grace.pasceri@canadiansolar.com*

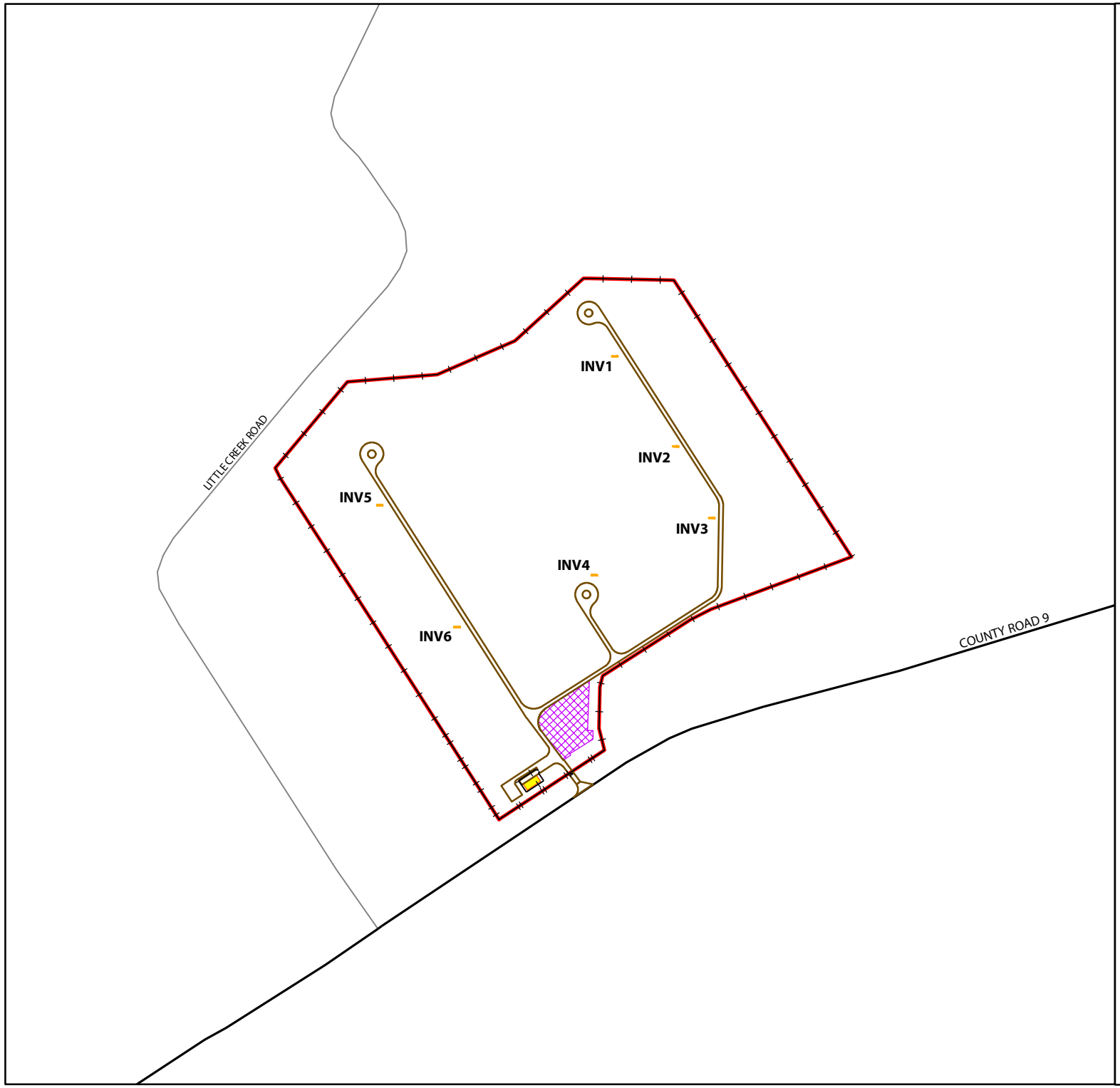
3. Project Location

The proposed Class 3 Solar Facility is located on Part of Lots 14 and 15, Concession 4 and 5, in the Township of North Fredericksburg and the Town of Greater Napanee. **Figure 1** shows the general location of the project in Ontario. The project location consists of 32.4 hectares of privately owned land (leased by the proponent) with geographic coordinates (centroids) as follows:

- Latitude: 44° 13' 46.05" N
- Longitude: 76° 54' 27.23" W

"Project Location" is defined in *Ontario Regulation 359/09* to be "a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project". **Figure 2** shows the proposed layout and location of all project components. Further information on facility components making up the project location is provided in the *Design and Operations Report*, in the REA submission.

Figure 1: General Location of Little Creek in Ontario



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Little Creek
Figure 2:
Project Component Layout

Legend

- Major Road
- Minor Road

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

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4. Overview of Noise Study

4.1 Summary of Acoustic Environment & Applicable Noise Limits

The background ambient noise, exclusive of that generated by Little Creek Solar facility, can be characterized as having qualities of a Class 3 (Rural) Area, as described in the Ontario Ministry of the Environment Noise Pollution Control Publication NPC-232 *Sound Level Limits for Stationary Sources in Class 3 Areas (Rural).* The primary contributor to the background sound during the daytime and nighttime periods are sounds of nature and occasional vehicle traffic on nearby roadways.

The NPC-232 Class 3 Area exclusion limits of 45 dBA for daytime (07:00 – 19:00), 40 dBA for evening (19:00 to 23:00) and 40 dBA for nighttime (23:00 to 07:00) were selected to represent the performance limits at noise sensitive receptors [note: for the purposes of this report, since the limits for evening and nighttime are the same, the nighttime is defined as 19:00 to 07:00].

4.2 Statement of Compliance

With the implementation of the noise mitigation measures indicated in this report, the proposed Little Creek Solar project will comply with the daytime and nighttime noise criteria as defined in the Ontario Ministry of the Environment Noise Pollution Control Publication NPC-232 *Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)*, for all sources assessed in this study.

5. Facility Description

The Little Creek facility will consist of 40,176 solar PV modules. These will be contained in a series of fixed racking systems which will be supported by steel uprights on mounted driven steel piles, steel helical screw piles or cast-in-drilled-hole foundations, depending on the soil conditions within the project location. Solar PV panels (290 - 300 watts each) will be mounted on the racks and the panels and racks will be aligned in rows approximately 4 - 5 metres apart.

Inverters and transformers will be installed to convert DC to AC current and boost the voltage for connection to the grid. The components that emit noise are as follows:

Substation Transformer

One (1) 44 kV, 10 MVA (max) substation transformer will be installed to step up the current for connection with the grid. The substation transformer will be manufactured by Virginia Transformer Corp. The transformer specifications, including NEMA noise rating and dimensions are provided in **Appendix A**. The octave spectrum for the substation transformer was calculated using IEEE standard, accounting for 0.3m increase in dimensions. The transformer is oversized and can handle up to 10 MVA (ONAF). Noise spectrum calculation is presented in **Appendix A**. The sound power calculation includes a 5 dB tonal penalty across the octave band.

Inverter Stations

Seven (7) Medium Voltage Stations (MVS) will be installed at the project location. Six (6) inverter stations will consist of two (2) inverters and an inverter transformer. One (1) inverter station (i.e., inverter station #2) will consist of one (1) inverter and an inverter transformer (see below).

Inverters

A total of eleven (11) inverters (to convert DC to AC current) will be used at the project location. Each inverter will have its own cabinet-type enclosure and will be mounted on a concrete platform inside a larger enclosure. The inverters will be SMA's Sunny Central model SC800CP-US, rated for up to 800 kVA of continuous power output. The manufacturer's noise data for the inverter, provided in 1/3 octave band, was used for this assessment (see **Appendix A**).

Inverter Transformers

A total of six (6) inverter transformers will be installed beside the inverters to boost the AC voltage for connection to the grid. Five (5) of the inverter transformers will have a power rating of up to 1.6 MVA for each inverter station. One (1) inverter transformer (i.e. inverter transformer #3) will have a

power rating of up to 0.8 MVA. The inverter transformers will be located on concrete platforms next to the inverter enclosures.

Figure 2 identifies the inverter stations (each including two inverters and one inverter transformer, except station #2, which has only one inverter) with the label INV. The octave spectra and the overall Sound Power Levels (PWLs) for on-site noise sources are presented in **Table 1**.

Table 1: Summary of Noise Source Types

Source		Octave Spectrum (dB)									Overall	
Type	Count	31.5	63	125	250	500	1000	2000	4000	8000	A	lin
Substation Transformer	1	43.1	62.3	74.4	76.9	82.3	79.5	75.7	70.5	61.4	85.9	94.5
1.6 MVA Inverter Transformer	5	113.1	105.9	97.8	85.3	79.9	70.7	64.5	59.7	54.8	85.7	114.0
0.8 MVA Inverter Transformer	1	109.5	102.3	94.2	81.7	76.3	67.1	60.9	56.1	51.2	82.1	110.4
Inverter	11	96.2	89.1	86.7	88.2	88.3	82.7	86.4	95	84.4	97.3	100.4

Note:
A: A-weighted, Lin: Linear
The manufacturer-specified A-weighted spectra were converted to linear spectra and presented in this table.
The 5 dB tonal penalty is included in the sound power levels for all the noise sources presented above
The sound power spectrum for inverter includes cooling fan.

5.1 Operating Hours of Facility

The solar farm is designed to operate 365 days per year. The solar panels are only able to generate electricity when the sun is shining. Similarly, the inverters only operate when the solar panels are generating electricity. Furthermore, the inverters infrequently operate at full power as full power output requires a clear sky when the sun is at peak intensity. For this assessment the inverters and transformers were conservatively assumed to be operational at full power (i.e., maximum noise emission) during both daytime (07:00 to 19:00) and nighttime (19:00 to 07:00) hours [note: nighttime power generation occurs after 19:00 during the summer].

5.2 Site Plan Identifying All Significant Sources

Figures 3 illustrate the Little Creek Solar project location and identify all noise sources associated with the facility. **Figure 3** also illustrates all 'Potential[1] Noise Receptors' surrounding the project location. In addition, as per *Ontario Regulation 359/09* and guidance documents from the MOE, 'Assumed Future Noise Receptors' must be identified on vacant lots measuring at least 100 metres by 100 metres. Both "Potential Noise Receptors" and Vacant "Assumed Future Noise Receptors" within 1000 m of the project location have been identified in **Figure 3**.

[1] While it is possible that the potential noise receptor may be a barn or outbuilding that does not meet the definition of a noise receptor as defined by MOE Publication NPC-205 and NPC-232, these structures are considered to be noise receptors in order to err on the side of caution with regard to noise analysis.

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Little Creek
Figure 3:
Scaled Area Location Plan

Legend

- Existing Potential Noise Receptor
- Vacant Lot Receptor
- Major Road
- Minor Road
- 1000 m Project Location Setback
- Occupied Parcel
- Vacant Parcel

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

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6. Noise Source Summary

6.1 Noise Source Summary Table

The significant noise sources identified in this noise study are listed in **Table 2**. This table contains sound power levels, source location, sound characteristics, and any noise control measures that already exist as a part of the original equipment.

Table 2: Noise Source Summary

Noise Source ID	PWL (dBA)	Source Location[1] (I or O)	Sound Characteristics[2] (S,Q,I,B,T,C)	Noise Control Measures[3] (S,A,B,L,E,O,U)	UTM		Height (m)
					X (m)	Y (m)	
INV1	100.3	O	T	U	346272	4896894	2
INV2	97.3	O	T	U	346353	4896779	2
INV3	100.3	O	T	U	346401	4896687	2
INV4	100.3	O	T	U	346250	4896610	2
INV5	89.1	O	T	U	345970	4896696	2
INV6	89.1	O	T	U	346073	4896539	2
INVTR1	85.7	O	T	U	346277	4896894	2
INVTR2	82.1	O	T	U	346357	4896779	2
INVTR3	85.7	O	T	U	346405	4896687	2
INVTR4	85.7	O	T	U	346255	4896610	2
INVTR5	85.7	O	T	U	345974	4896696	2
INVTR6	85.7	O	T	U	346078	4896539	2
TRS	85.9	O	T	U	346175	4896339	2.5

Note:
TRS: Substation transformer
INV: inverter station (all inverter stations include two inverters with the exception of #2, which includes one inverter. The noise data for inverter stations with 2 inverters has been adjusted accordingly (addition of 3 dB).
INVTR: Inverter transformer (all inverter transformers are 1.6 MVA except #2 which is 0.8 MVA).

Noise Source Summary Table Notes:

1. Source Locations

O – located/installed outside of a building, including on the roof
I – located/installed inside a building

2. Sound Characteristics

S – Steady
Q – Quasi Steady Impulsive
I – Impulsive
B – Buzzing
T – Tonal
C – Cyclic
Int – Intermittent

3. Noise Control Measures

S – silencer, acoustic louver, muffler
A – acoustic lining, plenum
B – barrier, berm, screening
L – lagging
E – acoustic enclosure
O – other
U – uncontrolled

6.2 Noise Source Specifications

Noise source specifications including manufacturer-specified noise data and calculation of transformer noise levels are provided in **Appendix A**.

6.3 Source Power/Capacity Ratings

Manufacturer data for capacity and operating specifications for primary noise sources can be found in **Appendix A.**

6.4 Noise Control Description & Acoustical Specifications

Each inverter station consists of two (2) inverters and one (1) 1.6 MVA step-up inverter transformer, with the exception of station #2 which will have one (1) inverter and a 0.8 MVA step-up inverter transformer. The inverters will each be contained in a cabinet (as per the specifications presented in **Appendix A**) and a secondary enclosure. The secondary enclosure will have louvers for ventilation. Conservatively, no additional noise mitigation measure was incorporated in the modelling for the secondary enclosure.

The secondary enclosure will have openings for ventilation through which noise can propagate to outside. Through modelling iterations it was determined that two (2) of the inverter enclosures (i.e., INV5 and INV6) will require acoustic louvers for the openings. The Transmission Loss (TL) spectrum for the required acoustic louver is presented in **Table 3**.

Table 3: Noise Attenuation Data for Acoustic Louver

Noise Source	Noise Control		TL Spectrum (dB)					
	Type	Manufacturer	125	250	500	1000	2000	4000
INV5 and INV6	Acoustic Louver	Greenheck	13	12	17	25	36	25

7. Point of Reception Noise Impact Analysis

7.1 Land Use Zoning Plan

The planned solar facility will occur within lands zoned by the Town of Greater Napanee as 'Rural'. The surrounding lands can be described as rural/agricultural with scattered residential dwellings. Zoning and land use information is provided in the *Design and Operations Report* of the REA submission.

7.2 Scaled Area Location Plan

Figure 3 is an aerial photo showing the location of the proposed Little Creek Solar and the surrounding area including the nearby receptors.

7.3 Points of Reception (PORs) List and Description

The Model Municipal Noise Control By-law defines a Point of Reception (POR)/receptor as "*any point on the premises of a person where sound or vibration originating from other than those premises is received.*" Noise-sensitive receptors, as defined in MOE Publications NPC-205 and NPC-232, include the following land uses:

- Permanent, seasonal, or rental residences;
- Hotels, motels and campgrounds;
- Schools, universities, libraries and daycare centres;
- Hospitals and clinics, nursing/retirement homes; and
- Churches and places of worship.

Conservatively, a receptor height of 4.5 metres was considered for all receptors, assuming a 2-storey dwelling at each receptor location. The UTM coordinates (NAD83) of the receptors used in the noise modelling are summarized in **Table 4**. For the vacant lot receptors, the centres of the 100 metre by 100 metre lots were chosen to represent the receptor locations, as per relevant MOE guidelines.

Table 4: Noise Sensitive Receptors – Coordinates

Point of Reception		Location of the Dwelling	
ID	Description	UTM-X (m)	UTM-Y (m)
R1	Existing Potential Noise Receptor	345897	4896443
R2	Existing Potential Noise Receptor	345956	4896152
R3	Existing Potential Noise Receptor	346034	4896160
R4	Existing Potential Noise Receptor	345830	4896025
R5	Existing Potential Noise Receptor	346827	4896502
R6	Existing Potential Noise Receptor	347202	4896704
R7	Existing Potential Noise Receptor	347324	4896697
R8	Existing Potential Noise Receptor	347404	4896746
R9	Existing Potential Noise Receptor	347471	4896793
R10	Existing Potential Noise Receptor	346102	4897725
R11	Existing Potential Noise Receptor	346018	4897382
R12	Existing Potential Noise Receptor	345988	4897336
R13	Existing Potential Noise Receptor	345922	4897351
R14	Existing Potential Noise Receptor	345956	4896996
R15	Existing Potential Noise Receptor	345816	4896831
R16	Existing Potential Noise Receptor	345677	4896662
R17	Existing Potential Noise Receptor	345467	4895969
R18	Existing Potential Noise Receptor	345743	4895964
R19	Existing Potential Noise Receptor	345672	4895914
R20	Existing Potential Noise Receptor	345658	4895863
R21	Existing Potential Noise Receptor	346106	4897968
VL1	Vacant Lot Receptor	346204	4896241
VL2	Vacant Lot Receptor	346718	4896591
VL3	Vacant Lot Receptor	345902	4896951

Point of Reception		Location of the Dwelling	
ID	Description	UTM-X (m)	UTM-Y (m)
VL4	Vacant Lot Receptor	345893	4897316
VL5	Vacant Lot Receptor	345943	4897382
VL6	Vacant Lot Receptor	345992	4897622
VL7	Vacant Lot Receptor	346078	4897685
VL8	Vacant Lot Receptor	347161	4896607
VL9	Vacant Lot Receptor	347374	4896724
VL10	Vacant Lot Receptor	347531	4896828
VL11	Vacant Lot Receptor	345425	4895823
VL12	Vacant Lot Receptor	345409	4895655
VL13	Vacant Lot Receptor	345560	4895810
VL14	Vacant Lot Receptor	346091	4897861
VL15	Vacant Lot Receptor	346051	4897575

7.4 Procedure for Assessing Noise Impacts at Each POR

7.5 Method Selection Factors

The worst-case noise emission scenario at each POR was modeled using the CADNA/A software program from DataKustik GmbH. The outdoor noise propagation model is based on ISO 9613, Part 1: Calculation of the absorption of sound by the atmosphere, 1993 and Part 2: General method of calculation (ISO-9613-2: 1996). The model is capable of incorporating various site-specific features such as elevation, berms, ground absorption and barriers to accurately predict noise levels at specific receptors, pertaining to noise emissions from a particular source(s). Graphical output generated by CADNA noise model, showing the noise level contours are presented in **Figures 4** and **5** for 1.5m and 4.5m receptor heights, respectively.

7.6 Ambient Determination

No on-site measurements were made to assess the background ambient noise level at the noise-sensitive receptors. Therefore, the MOE's default daytime and nighttime criteria for a Class 3 Area were used for this assessment.

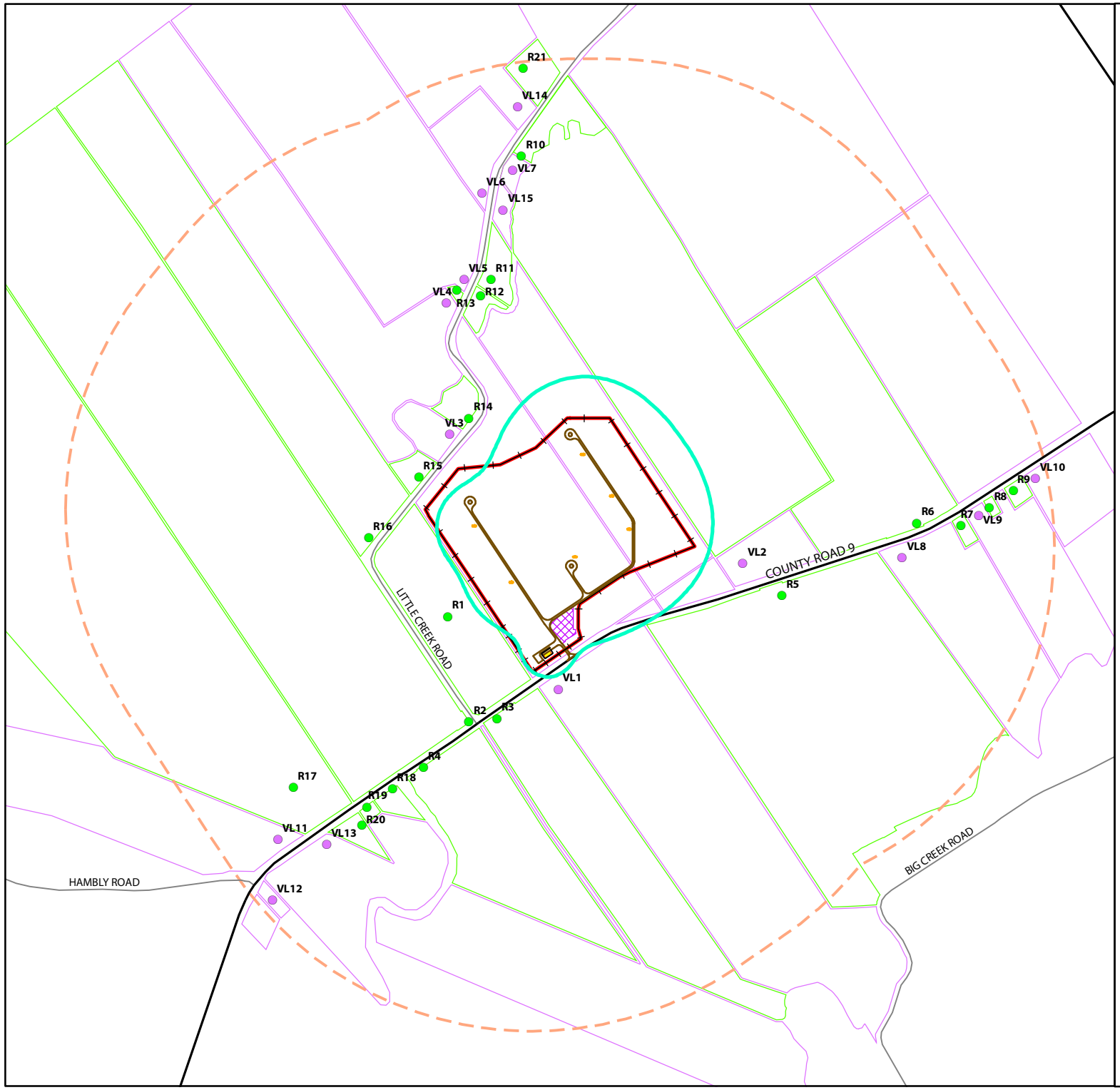
7.7 Parameter/Assumptions for Calculations

Manufacturer-specified noise data and calculated noise levels were used in the CADNA/A software to model the noise impact at each Point of Reception (POR). Also incorporated in the modelling was the site layout for the project. The noise impact for each receptor was modelled assuming the worst-case noise emission scenario at the site. The significant noise sources for the facility include:

- Inverters Stations; and,
- Substation Transformer.

Inverter Stations – Each inverter station consists of two (2) inverters and one (1) 1.6 MVA step-up inverter transformer, with the exception of station #2 which will have one (1) inverter and a 0.8 MVA step-up inverter transformer. The components are expected to be operational primarily during the daytime period; however, to be conservative the contributions from these sources were also included in the nighttime scenario. As per the MOE requirement, a 5 dB tonal penalty was added to the inverter and inverter transformer noise spectrums for the tonal aspect of the noise generated by these sources. The inverter units were modeled as point sources with hemi-spherical spreading.

Substation Transformer – The substation transformers were modeled using calculated transformer sound power spectrum based on the NEMA (noise) rating provided by the manufacturer (see **Appendix A**). A 5 dB tonal penalty was also added to the transformer noise spectrum. Like the inverter units, the transformers were conservatively modeled using the same data for nighttime as for daytime. The transformers were modeled as point sources with hemi-spherical spreading.



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Little Creek
Figure 4:
Predicted Noise Level Contours at 1.5 m Height

Legend

- Existing Potential Noise Receptor
- Vacant Lot Receptor
- 40 dBA Noise Contour at 1.5 m
- Major Road
- Minor Road
- 1000 m Project Location Setback
- Occupied Parcel
- Vacant Parcel

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

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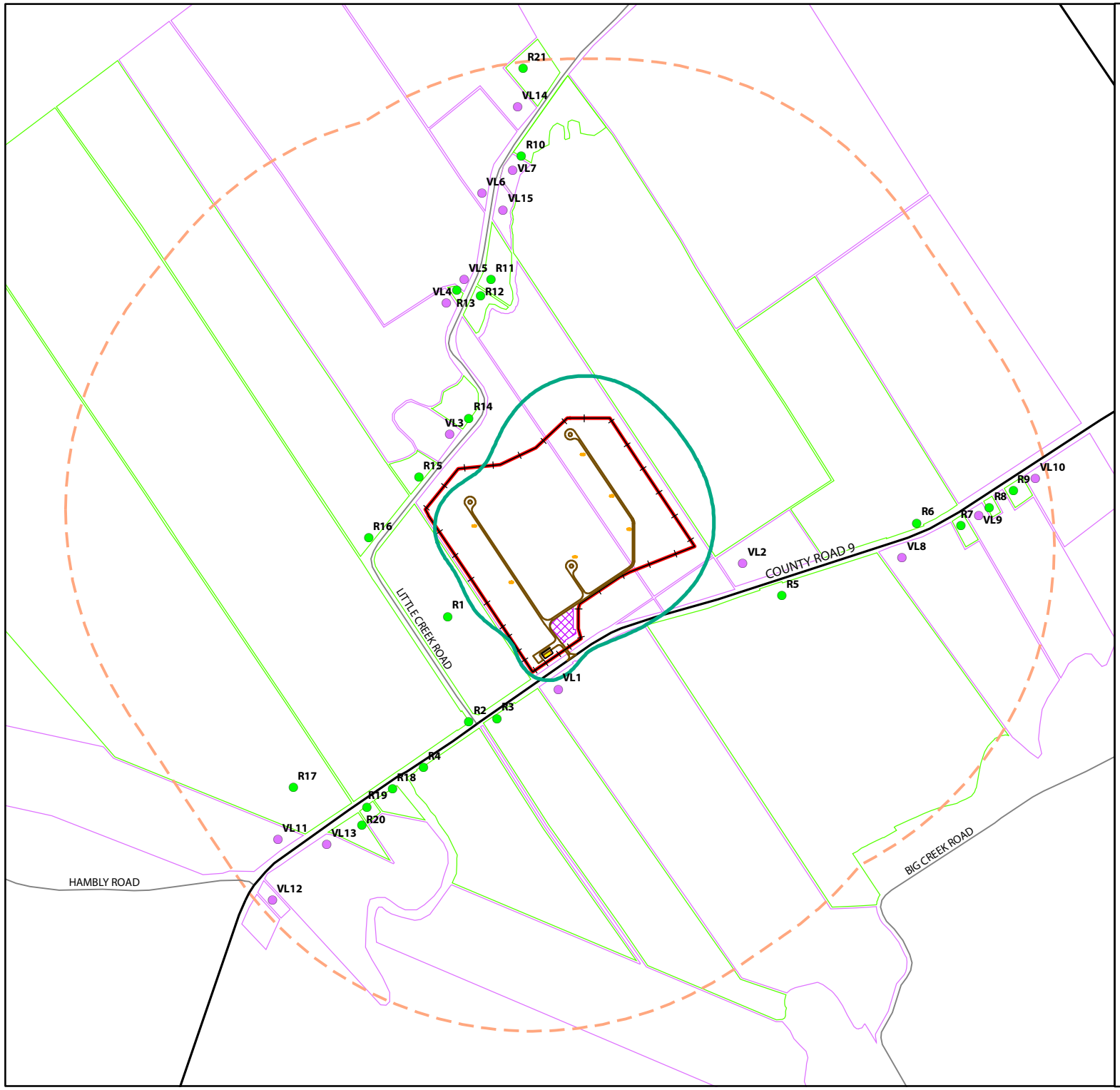

CanadianSolar

Little Creek
Figure 5:
Predicted Noise Level Contours at 4.5 m Height

Legend

- Existing Potential Noise Receptor
- Vacant Lot Receptor
- 40 dBA Noise Contour at 4.5 m Height
- Major Road
- Minor Road
- 1000 m Project Location Setback
- Occupied Parcel
- Vacant Parcel

Project Components

- Access Road
- Fence
- Project Boundary
- Substation
- Inverter
- Staging Area

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Receptors – Conservatively, a receptor height of 4.5 metres representing a receiver in the plane of a second floor window (i.e., 2-storey dwelling) was assumed for all receptor locations.

Topography – There are topographical features that extend beyond the property boundary of the project sites, and can reduce the noise impact from the proposed projects. However, conservatively, topography was not included in the noise modelling.

Reflections – Conservatively, sources were modeled assuming a third order reflection.

Ground Absorption – For the noise modeling, a global ground absorption coefficient of 0.7 was used to represent the mostly absorptive, vegetated areas, between the onsite sources and receptors.

7.8 Point of Reception Noise Impact Tables

Tables 5 summarizes the partial noise levels (i.e., contribution from each of the onsite noise sources to the receptor noise levels) and corresponding source-receptor distance for the closest (most impacted) PORs in various directions for the Little Creek Solar project. The sound level at the POR accounts for attenuation by divergence (distance), barriers, ground effects and atmospheric absorption. This table gives the sum total of these attenuations for each source. Details of the noise modelling (CADNA output file), including partial levels for all the PORs are provided in **Appendix B – CADNA Model Output**. Graphical output generated by CADNA noise model, showing the noise level contours are presented in **Figures 4** and **5** for 1.5m and 4.5m receptor heights, respectively.

Table 5: Point of Reception Beam Noise Impact Tables – Partial Levels (dBA)

VL1			VL2			R15			R1		
Source ID	Dist. (m)	Partial Level (dBA)	Source ID	Dist. (m)	Partial Level (dBA)	Source ID	Dist. (m)	Partial Level (dBA)	Source ID	Dist. (m)	Partial Level (dBA)
INV4	372	31.2	INV3	331	32.7	INV1	460	28.4	INV4	391	30.6
INV3	488	27.7	INV4	468	28.2	INV4	487	27.7	INV3	560	25.9
TRS	102	34.5	INV1	539	26.4	INV3	602	25.0	INV1	587	25.3
INV1	657	23.9	INV2	411	26.9	INV5	205	28.2	INV6	201	28.5
INV2	558	22.9	INVTR3	327	25.3	INV2	540	23.4	INV2	566	22.8
INV6	326	23.1	INV6	647	15.7	INVTR5	208	28.7	INV5	263	25.5
INVTR6	324	25.4	INVTR4	463	22.5	INV6	389	21.1	INVTR6	205	28.8
INV5	512	18.2	INV5	755	14.0	INVTR6	392	23.9	INVTR5	264	26.9
INVTR4	373	24.3	INVTR1	535	21.3	INVTR1	465	22.5	TRS	297	24.7
INVTR3	489	22.1	TRS	599	18.1	INVTR4	492	22.0	INVTR4	395	23.8
INVTR5	510	21.7	INVTR2	407	20.0	TRS	609	17.9	INVTR3	564	20.9
INVTR1	657	19.6	INVTR6	642	19.8	INVTR3	606	20.3	INVTR1	590	20.5
INVTR2	559	17.4	INVTR5	751	18.5	INVTR2	544	17.6	INVTR2	570	17.2

8. Acoustic Assessment Summary

8.1 Acoustic Assessment Summary Table

Table 6 summarizes the compliance of the proposed Little Creek Solar project with the applicable Sound Level Performance Limits at the designated Points of Reception. The performance limits in the table reflect the applicable sound level limits in the MOE Publication NPC-232 for Class 3 Areas.

Table 6: Acoustic Assessment Summary Table

Point of Reception		Sound Level at POR (dBA, Leq)*	Verified by Acoustic Audit (Yes/No)	Performance Limit		
ID	Description			Daytime (dBA)	Nighttime (dBA)	Compliance (Yes/No)
R1	Existing Potential Noise Receptor	37.1	No	45	40	Yes
R2	Existing Potential Noise Receptor	33	No	45	40	Yes
R3	Existing Potential Noise Receptor	34	No	45	40	Yes
R4	Existing Potential Noise Receptor	30	No	45	40	Yes
R5	Existing Potential Noise Receptor	33.2	No	45	40	Yes
R6	Existing Potential Noise Receptor	28	No	45	40	Yes
R7	Existing Potential Noise Receptor	26.6	No	45	40	Yes
R8	Existing Potential Noise Receptor	25.8	No	45	40	Yes
R9	Existing Potential Noise Receptor	25.1	No	45	40	Yes
R10	Existing Potential Noise Receptor	27	No	45	40	Yes
R11	Existing Potential Noise Receptor	31.1	No	45	40	Yes
R12	Existing Potential Noise Receptor	31.6	No	45	40	Yes
R13	Existing Potential Noise Receptor	30.8	No	45	40	Yes
R14	Existing Potential Noise Receptor	36.9	No	45	40	Yes
R15	Existing Potential Noise Receptor	36.2	No	45	40	Yes
R16	Existing Potential Noise Receptor	33.6	No	45	40	Yes
R17	Existing Potential Noise Receptor	26.6	No	45	40	Yes
R18	Existing Potential Noise Receptor	28.7	No	45	40	Yes
R19	Existing Potential Noise Receptor	27.7	No	45	40	Yes
R20	Existing Potential Noise Receptor	27.1	No	45	40	Yes
R21	Existing Potential Noise Receptor	24.7	No	45	40	Yes
VL1	Vacant Lot Receptor	38.1	No	45	40	Yes
VL2	Vacant Lot Receptor	36.5	No	45	40	Yes

Point of Reception		Sound Level at POR (dBA, Leq)*	Verified by Acoustic Audit (Yes/No)	Performance Limit		
ID	Description			Daytime (dBA)	Nighttime (dBA)	Compliance (Yes/No)
VL3	Vacant Lot Receptor	36.4	No	45	40	Yes
VL4	Vacant Lot Receptor	31	No	45	40	Yes
VL5	Vacant Lot Receptor	30.6	No	45	40	Yes
VL6	Vacant Lot Receptor	27.8	No	45	40	Yes
VL7	Vacant Lot Receptor	27.4	No	45	40	Yes
VL8	Vacant Lot Receptor	28.4	No	45	40	Yes
VL9	Vacant Lot Receptor	26.1	No	45	40	Yes
VL10	Vacant Lot Receptor	24.6	No	45	40	Yes
VL11	Vacant Lot Receptor	25.4	No	45	40	Yes
VL12	Vacant Lot Receptor	24.2	No	45	40	Yes
VL13	Vacant Lot Receptor	26.1	No	45	40	Yes
VL14	Vacant Lot Receptor	25.6	No	45	40	Yes
VL15	Vacant Lot Receptor	28.6	No	45	40	Yes

8.2 Rationale for Selecting Applicable Noise Guideline Limits

8.2.1 Acoustic Environment

The background ambient noise, exclusive of the proposed Little Creek Solar project, can be characterized as a Class 3 Area as described in NPC-232. The sources that contribute to the background sound include sounds of nature as well as occasional vehicle traffic noise from nearby roadways.

For a project located in a Class 3 Area, the project is considered compliant with NPC-232 if the predicted cumulative noise levels at the nearby receptors are at or below either the exclusion limits (see **Table 7**) or the background ambient levels as measured or calculated.

Table 7: NPC-232 – Class 3 Area Exclusion Limits

Time of Day	One Hour Leq (dBA) Class 3 Area
07:00 – 19:00	45
19:00 – 23:00	40
23:00 – 07:00	40

The applicable nighttime limit is the most restrictive level for operation of a stationary source. The background ambient sound level at the points of reception were not measured or modeled. Therefore, the NPC-232 exclusion limits have been adopted as the performance limit at each of the PORs.

8.2.2 Predictable Worst Case Operating Scenario

The inverters, inverter transformers and substation transformers were all assumed to operate on a continuous basis at their maximum load during daytime, evening and nighttime hours. These sources were modeled as such.

9. Conclusion

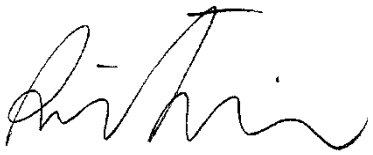
This *Noise Study Report* was prepared as a supporting document for a REA amendment application for the proposed Little Creek Solar 8.5 MW solar farm project. The assessment conforms to the guidelines for an Acoustic Assessment Report as defined in Ministry of the Environment publication NPC-233 *Information to be Submitted for the Approval of Stationary Sources of Sound*. All procedures used in this assessment were conducted in accordance with requirements of NPC-233 and additional general direction provided by the Ontario Ministry of the Environment for preparation of acoustic assessment reports for solar farms under the REA. In this NSR, it was determined that noise mitigation measures consisting of acoustic louvers to be installed on all the ventilation openings of the inverter enclosures for stations #5 and #6 would be required to achieve compliance. With the implementation of the noise mitigation measures determined in this study, the proposed Little Creek Solar project will comply with the daytime and nighttime noise criteria as defined in the Ontario Ministry of the Environment Noise Pollution Control Publication NPC-232 *Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)*, for all sources assessed in this study.

10. Closure

This *Noise Study Report* has been prepared based on the information provided and/or approved by H.B. White Canada Corp. and/or Canadian Solar Solutions Inc. This report was prepared by Dillon for the sole benefit of H.B. White Canada Corp. to satisfy reporting requirements for the Ontario Ministry of the Environment. The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of this report preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Respectfully Submitted,

DILLON CONSULTING LIMITED



Amir A. Iravani, Ph.D.
Associate

11. References

Industrial Noise Control Fundamentals and Applications, Bell, Lewis H., Marcel Dekker, Inc. 1982.

Ministry of Environment Publication NPC- 205 Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban), October 1995.

Ministry of Environment Publication NPC- 232 Sound Level Limits for Stationary Sources in Class 3 Areas (Rural), October 1995.

Ministry of Environment Publication NPC-233 Information to be Submitted for Approval of Stationary Sources of Sound, October 1995.

Transformers, Regulators and Reactors, NEMA Standards Publication No. TR 1-1993(R2000), National Electrical Manufacturers Association.

Appendix A

MANUFACTURER'S EQUIPMENT SPECIFICATIONS

Acoustic Environmental Test

SC 800CP-US central inverter

(Extract of Test report SC800CP-US-91:LE1613)

1 Overview

Project title:	SC800CP-US
Type of test / thresholds and requirements:	Sound level measurement according to DIN EN ISO 3744:2011-02 and DIN EN ISO 9614-2:2010-11 of sinusoidal, irregularly shaped, transient signals. Classification of ambient conditions in compliance with the German Noise Control Guidelines (TA Lärm). (according to Section 2)
Type of device:	e.g. solar central inverter for large-scale PV power plants
Type designation:	SC800CP-US
Test specification:	Level of emissions according to the German Noise Control Guidelines and acoustic power

2 Results

The EN 3744:04/2005 and German Noise Control Guidelines form the testing specification for the thresholds and requirements	Requirement		Results [dBA]/ without fan (distance 1m)	Results [dBA]/ with fan (distance 1m)
	Standard (Germany)	SMA		
EN 3744:2011-02 typical value; LAeq averaged [1]	-	-	-	78,74
§48 of the German Federal Emission Control ACT (BImSchG): 09-2002 German Noise Control Guidelines; L_{pa} [2]	-	-	-	77,81
EN 9614-2 sound power L_{WA} [3]	-	-	-	92,30
Sound pressure level in 10m L_{xpA} [4]	-	-	-	64,31
Sound pressure level in 50m L_{xpA} [4]	-	-	-	50,32
Overall result (if applicable)			*Standard requirments: - passed	

* Dependent on the local conditions at the mounting location (distance of 10m standard)

3 Operating States

The following states and configurations have been defined as operating conditions:

- Operation of the inverter.
- Operating conditions: UDC =820 V; 800 kW
- The device fans must be running.
- The unit under test must have reached its operating temperature.
- The unit under test must have reached an operating temperature of 25°C.

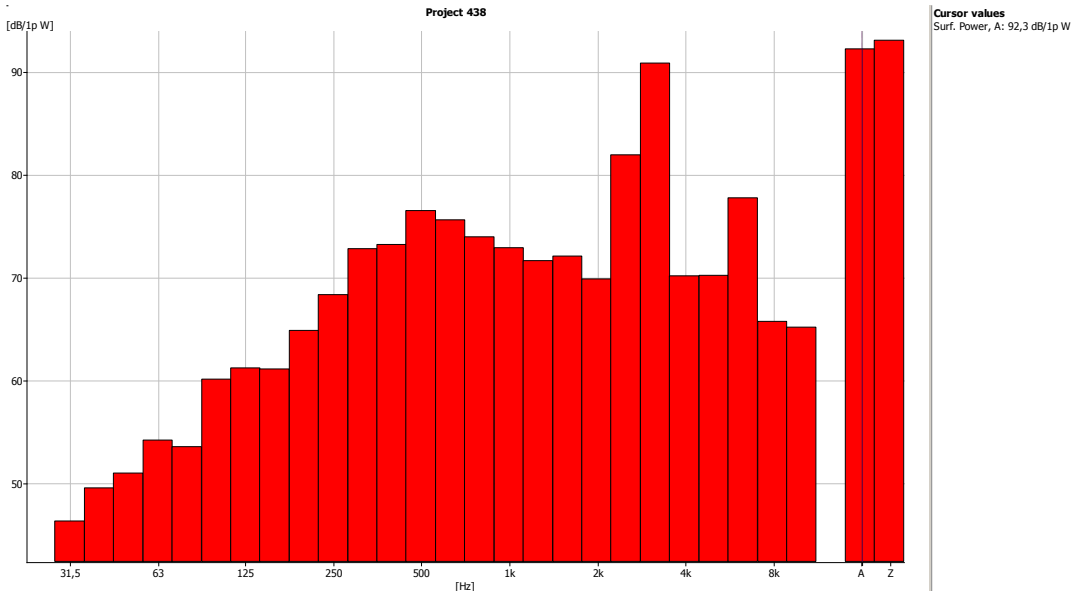
4 Calculating the Acoustic Power

L_{pA} =	average sound pressure level on the measurement surface [dB_A] *	77.81
S =	overall measurement surface [m^2]	28.09
S_0 =	1 [m^2]	

* This specified spatially/temporally averaged sound pressure level was determined using the calcu-lated acoustic power level.
$L_{PA} = L_{WA} - 10\log (S/S_0)$

Acoustic power of L_{WA}= 92,3 dBA/W results for the measurement.

Acoustic Power Levels of the Third Octave Band Frequencies According to EN ISO 9614-2



A-rated sound power = 92.3 $dB_{A/W}$

Z-rated sound power = 93.1 $dB_{A/W}$

A-rated acoustic power – based on physiologic human hearing

Z-rated acoustic power – technically linear measured value

5 Overview of the Acoustic Power

Third octave band center frequency [Hz]	Acoustic power- level LwA [dBA/pW] 880 kW	Acoustic power- level LwZ [dBA/pW] 880 kW
25 Hz	42,33	–
31.5 Hz	46,34	–
40 Hz	49,56	–
50 Hz	51	–
63 Hz	54,21	–
80 Hz	53,57	–
100 Hz	60,14	–
125 Hz	61,23	–
160 Hz	61,13	–
200 Hz	64,88	–
250 Hz	68,36	–
315 Hz	72,83	–
400 Hz	73,24	–
500 Hz	76,54	–
630 Hz	75,64	–
800 Hz	73,99	–
1 kHz	72,93	–
1.25 kHz	71,67	–
1.6 kHz	72,11	–
2 kHz	69,89	–
2.5 kHz	81,96	–
3.15 kHz	90,89	–
4 kHz	70,19	–
5 kHz	70,24	–
6.3 kHz	77,78	–
8 kHz	65,76	–
10 kHz	65,2	–
Acoustic power above the surface	A-rated	Z-rated
	92,3	93.1

6 Deriving the Emission Sound Pressure Level at a Distance

The calculated acoustic power can be used to derive an A-rated sound pressure level L_{xpA} for undirected sources at any distance x.

$$LxpA = LwA + Ko - 10 \cdot \log\left(4 \cdot \pi \cdot \frac{X^2}{So}\right)$$

K_0 = solid angle index on the floor 3 [dB]
X = distance from the source [m]
S_0 = 1 m

Device	Distance X [m]	Sound pressure level LxpA [dBA] without fan	Sound pressure level LxpA [dBA] with fan
SC800CP-US	10	–	64,30
	50	–	50.33

7 Appendix - Calculations

deriving sound pressure level at a distance

LxpA = LWA + K0 - 10log (4*PI*(x^2/S0))

LWA 92,3dB
K0 3dB
x 10m
S0 1m

LxpA 64,31dBA

Noise Source	SMA Inverter Unit PWL			
Distance		A-weighted		
Parameters	read 1	read 2	avg.	PWL (dBA)
25 Hz	42.33		42.33	
31.5 Hz	46.34		46.34	**51.8**
40 Hz	49.56		49.56	
50 Hz	51		51	
63 Hz	54.21		54.21	**57.9**
80 Hz	53.57		53.57	
100 Hz	60.14		60.14	
125 Hz	61.23		61.23	**65.6**
160 Hz	61.13		61.13	
200 Hz	64.88		64.88	
250 Hz	68.36		68.36	**74.6**
315 Hz	72.83		72.83	
400 Hz	73.24		73.24	
500 Hz	76.54		76.54	**80.1**
630 Hz	75.64		75.64	
800 Hz	73.99		73.99	
1 kHz	72.93		72.93	**77.7**
1.25 kHz	71.67		71.67	
1.6 kHz	72.11		72.11	
2 kHz	69.89		69.89	**82.6**
2.5 kHz	81.96		81.96	
3.15 kHz	90.89		90.89	
4 kHz	70.19		70.19	**91.0**
5 kHz	70.24		70.24	
6.3 kHz	77.78		77.78	
8 kHz	65.76		65.76	**78.3**
10 kHz	65.2		65.2	

	dBA	.+ 5dB tonal penalty
31.5 Hz	**51.8**	56.8
63 Hz	**57.9**	62.9
125 Hz	**65.6**	70.6
250 Hz	**74.6**	79.6
500 Hz	**80.1**	85.1
1 kHz	**77.7**	82.7
2 kHz	**82.6**	87.6
4 kHz	**91.0**	96.0
8 kHz	**78.3**	83.3

Tranformer Noise Calculation

L =	1.8	2.4039	(add 0.6m)
W =	1.9	2.4979	(add 0.6m)
H =	1.8	2.1293	(add 0.3m)
S.A. =	**26.879**	**m2**	

Transformer Maximum Rating (MVA) = 0.8 MVA
Total Surface Area (m2) = 26.8787 m2

NEMA Calculation:

PWL1 = 55 + 12log (MVA)……..(dBA)

Area factor Correction:

PWL2 = 10log (S.A.)……..…… (dBA)

Overall PWL

PWL(overall) = PWL1 + PWL2……..(dBA)

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Octave band Adjustments →	-3	3	5	0	0	-6	-11	-16	-23
Converstion from linear to A-weighted →	-39.4	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Resulting PWL Octave Band (A-weighted)...(dBA)	65.1	71.1	73.1	68.1	68.1	62.1	57.1	52.1	45.1
PWL + 5 dB tonal penalty……..…(dBA)	70.1	76.1	78.1	73.1	73.1	67.1	62.1	57.1	50.1
PWL + 5 dB tonal penalty……..…(dB)	109.5	102.3	94.2	81.7	76.3	67.1	60.9	56.1	51.2

Tranformer Noise Calculation

L =	1.8	2.4039	(add 0.6m)
W =	1.9	2.4979	(add 0.6m)
H =	1.8	2.1293	(add 0.3m)
S.A. =	**26.879**	**m2**	

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PWL(overall) = PWL1 + PWL2……..(dBA)

	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Octave band Adjustments →	-3	3	5	0	0	-6	-11	-16	-23
Converstion from linear to A-weighted →	-39.4	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Resulting PWL Octave Band (A-weighted)...(dBA)	65.1	71.1	73.1	68.1	68.1	62.1	57.1	52.1	45.1
PWL + 5 dB tonal penalty……..…(dBA)	70.1	76.1	78.1	73.1	73.1	67.1	62.1	57.1	50.1
PWL + 5 dB tonal penalty……..…(dB)	109.5	102.3	94.2	81.7	76.3	67.1	60.9	56.1	51.2

VIRGINIA TRANSFORMER CORP

220 Glade View Drive,
Roanoke, VA 24012
Ph. 540.345.9892
www.vatransformer.com

Proposal X131101A Rev. 1 Date: 7/19/2013

Prepared For JUWI Little Creek Solar Facility

Attn: William Sanders, William.Sanders@rmtinc.com

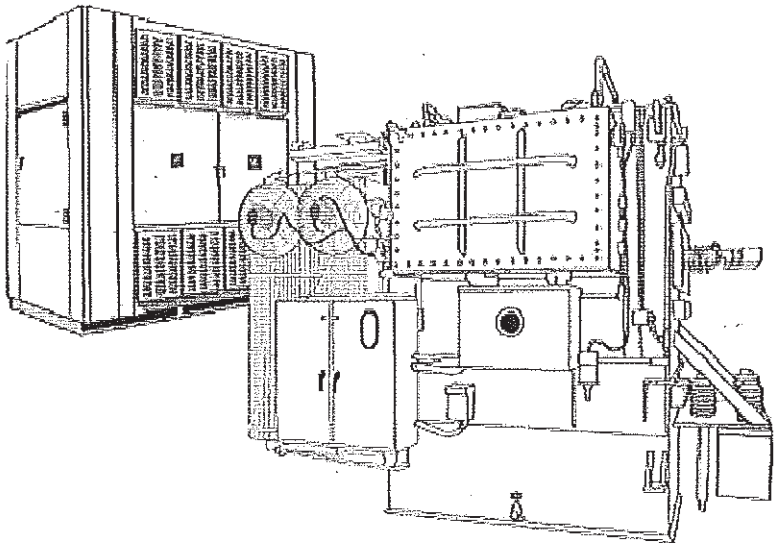
VTC Contact: Larry Horne, Larry_Horne@vatransformer.com
Ph: 540-345-9892 Ext 213

Description 7500/10000 MVA Step -up Transformer

For over 40 years, innovative technology and a commitment to superior customer service and support have established Virginia Transformer Corporation (VTC) as an engineering company leading in manufacturing a verity of Transformers.

VTC designs and manufactures custom power transformers ranging from 300 KVA to 300 MVA, 230 kV class, both liquid-filled and dry-type units.

VTC has design and manufacturing facilities in Roanoke, VA; Pocatello, ID and Chihuahua, Mexico. In addition, VTC has design and procurement capabilities in Delhi, India - establishing a world-wide presence as a supplier of transformer solutions. VTC reserves the right to manufacture the product quoted herein at any of these plants.



PROPOSAL SUMMARY

Option: 1 FR3 Fluid

ITEM	DESCRIPTION	QTY	UNIT PRICE	EXTENDED PRICE
1	7500 / 10000 KVA	01		

Option: 2 Mineral Oil

ITEM	DESCRIPTION	QTY	UNIT PRICE	EXTENDED PRICE
1	7500 / 10000 KVA	01		0

The Firm price offer is for shipment by 9/20/2013 and order by 4/19/2013. If shipment is delayed for customer reason, the price will be increased at a rate of 1.0% per month effective the first day after the shipment date expires. The validity of Index Price offer expires 12 months from the date of original proposal.

SHIPPING INFORMATION	
Validity of Quotation	8/19/2013
Shipment By	11/15/2013
F.O.B.	Destination
Freight	DAP Greater Napanee, Ontario, Canada

PAYMENT TERMS
20% with acknowledgement of P.O.
30% with Approval Drawing Submittal, Net 30 days
50% invoiced at time of shipment, Net 30 days

VA Transformer: Accounting, Phone: 540-345-9892, E-mail:accounting@vatransformer.com

NOTES

1. All prices are excluding any State, Federal, Sales or Use Tax.
2. Written Purchase Orders are required prior to any Engineering, Manufacturing, or Order Entry by VTC. The stated delivery date contained in this proposal is predicated on the factory loading at the time of quotation. The actual delivery date will only be confirmed at the time an order is received. Our acknowledgement will confirm the committed shipment date. Virginia Transformer Corp. reserves the option to ship this unit within a window of four to six (4 to 6) weeks prior to the date requested on the purchase order.
3. Access to final site and all access roads leading thereto must be suitable for un-impeded delivery by special, heavy-duty trucks carrying large transformers, including grades, turning radii, and surface conditions capable of supporting the combined weight of these trucks and transformers.

   VTC will include its standard O&M manual with a Final, As-Built package of drawings and cat cuts of the devices. Reference VTC website for a sample copy of our standard O&M manual (www.vatransformer.com > Brochures & White Papers > Liquid Filled Installation and Operation).

This proposal is Virginia Transformer's complete understanding of the specification requirements provided, and is the basis for acceptance of any resulting orders. The table below describes the salient ratings of the transformer(s) in the proposal:

ITEM #1

TECHNICAL SPECIFICATION:

ITEM #1	QUANTITY #1		
KVA	7500 / 10000	**Application**	Generator step-up
Cooling Class	KNAN / KNAF	**Winding Temp Rise (AVG)**	65°C
# Phases	3	**Dielectric Fluid**	Envirotemp FR3
Frequency (Hertz)	60	**Conductor Material**	Copper
HV Rating(V)	44000 Delta	**LV Rating(V)**	27600 GrdY / 15935
HV BIL(kV)	250	**LV BIL(kV)**	200
LV Taps	2 FCAN, 2 FCBN @ 2.50 %	**Nom. Impedance**	5.75 %; ±7.50% @7500 KVA 7.5%; @ 10000KVA
HV Bushing Mounting	Segment III, Cover Mounted	**LV Bushing Mounting**	Segment I, Cover Mounted
HV Terminal Chamber	NA	**LV Terminal Chamber**	NA
Radiators	Hot dip Galvanized unpainted w/Valve	**Paint Color / Type**	70 / III Polyamide Epoxy Over urethane
Losses	Guaranteed Max per ANSI Tolerance	**Coil Type**	CIRCULAR
No Load Losses	7 kW at 100% volts	**Load Losses**	30 kW @ 7500 KVA

TANK FEATURES:

1. De-energized Manual No Load Tap Changer
2. Diagrammatic Name Plate
3. Gasketed Manhole in Cover
4. Panel Type Radiators
5. Sealed Tank with Dry Nitrogen Blanket
6. Two Stainless Steel Ground Pads welded to Base on Diagonally Opposite Corners
7. Welded Top Cover

STANDARD GAUGES AND ADDITIONAL FIXTURES / ACCESSORIES

Gauge Details
Liquid Temperature Gauge with contacts
Pressure Vacuum Gauge & Bleeder
Liquid Level Gauge with Contacts
Pressure Relief Device with Flag & contacts
Simulated Winding Temperature Gauge with contacts
Sudden Pressure Relay – GAS and OIL
Seal in Relay
RTD for main tank

Note: Unless otherwise stated, all gauges and accessories shall be of VTC preferred provision.

BUSHINGS, CURRENT TRANSFORMERS AND LIGHTNING ARRESTERS

Details of Bushings:

Bushing	BIL	Location	Quantity/Phase	Make
HV	250	Segment III	1	VTC STD
LV	200	Segment I	1	VTC STD

Details of Current Transformers:

Location	Quantity/Phase	CT Radio	Single Ratio / Multi Ratio	Class / Accuracy
HV*	1	600:5	MR	0.3B2.0
LV	1	600:5	MR	C400
LV Neutral	1	600:5	MR	C400

*See the clarifications

Details of Arresters*:

Location	KV Class	MCOV	Class	Manufacturer
HV	46	42 kV	Station Class	VTC STD
LV	27	22 kV	Station Class	VTC STD

***VTC has quoted for Polymer station class arresters and not porcelain.**

Radiators

VTC standard radiators are Hot Dipped Galvanized and do not require painting. These radiators are suitable for all climatic conditions that include chemical, petro-chemical and marine conditions. Unless specified differently below, these standard, galvanized radiators will be provided.

Radiators included in this quoted transformer - Standard per above	
Demount	Hot Dipped Galvanized

TESTING:

1. Routine.
2. Impulse.
3. DGA.
4. Power factor.

AMBIENT CONDITIONS:

Ambient Temperature (*C)	Min. -20 / Av. 25 / Max. 40
Seismic Zone	Zone 1 & 2
Altitude (Feet)	≤3300 ft.
Sound Level	STD NEMA TR-1

SHIPPING & HANDLING DETAILS:

[A] Shipping & Overall Dimensions:		
Dimension	**Overall Dimensions(Inches)**	**Shipping Dimensions (Inches)**
Width	134	128.38
Depth	127	123.30
Height	155	152.88

[B] Shipping & Estimated Weight:	
Estimated Weight of the Unit (Lbs)	**Approximate Shipping Weight (Lbs)**
51,000	51,100

Remarks:

1. The above dimensions are approximate.

[C] Parts to be shipped separately:

None

Note: Assembly of ship separate parts is by others unless Value Added Options for installation services are included.

SUGGESTED SPARE PARTS:

Suggested Spare Parts	
Particulars	**Price ($)**
GASKET SET	
FANS	
HV BUSHINGS	
LV BUSHINGS	

VALUE ADDED OPTIONS

Standard Warranty 12/18 Months	Included
Extended Warranty 60/60 Months	Included
Test Witness Option	
Field Service: Unloading, Installation (make up-oil) and Filed Testing	
Impact Recorder	
VTC Final As-Built Package (FABP)	With Order
Final as-built Drawings	With FABP
Operation & Maintenance Manual	With Shipment/FABP
Catalog cuts for components	With Drawings/FABP
Spare parts price list for five-year operation	With FABP

CLARIFICATIONS/EXCEPTIONS TO THE SPECIFICATION

- VTC had assumed impedance 5.75% @ 7500KVA for this quote and 7.50% @ 10000KVA
- VTC has quoted for 600:5A, 0.3B2.0 accuracy class instead of 600:5, 0.15B1.8. See the CT Details.
- VTC has provided NEMA 3R control cabinet without Stainless steel.
- VTC takes exception for the clause 4.2.10 (Power factor not exceeding 0.5%).

Quote JUWI

No Load Loss (KW)	7	
KVA Rating	7500	
Load Loss at Reference Temp (KW)	30	
Impedance	5.75	%

Regulation Calculation

%R	0.40000	
%X	5.73607	

	PF	SinY	
Power Factor	1	0	0.56451
	1	0.00	0.56451

Efficiency Calculation at Various Percent of Load

		Power Factor	
		1	1
125%	1.25	99.43	99.43
100%	1.00	99.51	99.51
75%	0.75	99.58	99.58
50%	0.50	99.61	99.61
25%	0.25	99.53	99.53

X/R Ratio

14.34

Load Loss at Various Percent of Load

125%	1.25	46.88
100%	1.00	30.00
75%	0.75	16.88
50%	0.50	7.50
25%	0.25	1.88

9. DATA TO BE SUBMITTED WITH BID

1. Transformer Dimensions:
   a. Shipping: H: 153" W: 128" D: 123"
   b. Assembled: H: 155" W: 134" D: 127"
   c. Will transformer be shipped with the radiators installed? YES

2. Weight:
   a. Shipping 51,100 pounds
   b. Assembled 51,100 pounds

3. Oil:
   a. Type FR3 / OPTION - MINERAL OIL
   b. Volume 1780 gallons
   c. Will transformer be shipped with oil? YES

4. Transformer data:
   a. Manufacturer VIRGINIA TRANSFORMER CORP
   b. Type GSU
   c. Temperature rise 65° C.
   d. HV side voltage 44 KV DELTA
   e. LV side voltage 27.6 KV GRDY
   f. Winding material COPPER
   g. Winding type DISC / HELICAL
   h. Vector group
   i. Impulse withstand voltage (BIL)
      - HV side winding 250 BIL
      - LV side winding 200 BIL
      - Neutral winding 200 BIL
      - HV side bushing SEE PROPOSAL
      - LV side bushing "
      - Neutral bushing "
   j. Impedance at 10MVA 7.5% ± 7.5%
   k. X/R ratio 14.34
   l. Losses
      - No load 7 KW
      - Load 30 KW
      - Auxiliary 2 KW

5. Manufacturing Location ROANOKE, VA

CIMA

6. Schedule:

a. Drawing lead time ARO	3-4 WKS	weeks
b. Available witnessing points ARO	9-10	weeks
c. Testing ARO	12-13	weeks
d. Shipping ARO	14-15	weeks

7. Warranty 60/60 INCLUDED

CIMA

ISO 9001
"The Commitment Company"

VIRGINIA TRANSFORMER CORP
220 GLADE VIEW DRIVE • ROANOKE, VA 24012
PHONE 540.345.9892 • FAX 540.342.7694
www.vatransformer.com

October 30, 2013
L657
C028A

Via e-mail

KA Factor
20-12 Bram Court
Brampton, Ontario
L6W 3V1

Subject: **H.B. White/ Little Creek Solar Project**
PO# P13-361-4849, VTC job C028A

Dear Saif,

The above listed unit has been tested. The noise levels of ONAN and ONAF are determined based on IEEE C57.12.90 standard.

Sound Level values are (ONAN/ONAF) dB= 67/69

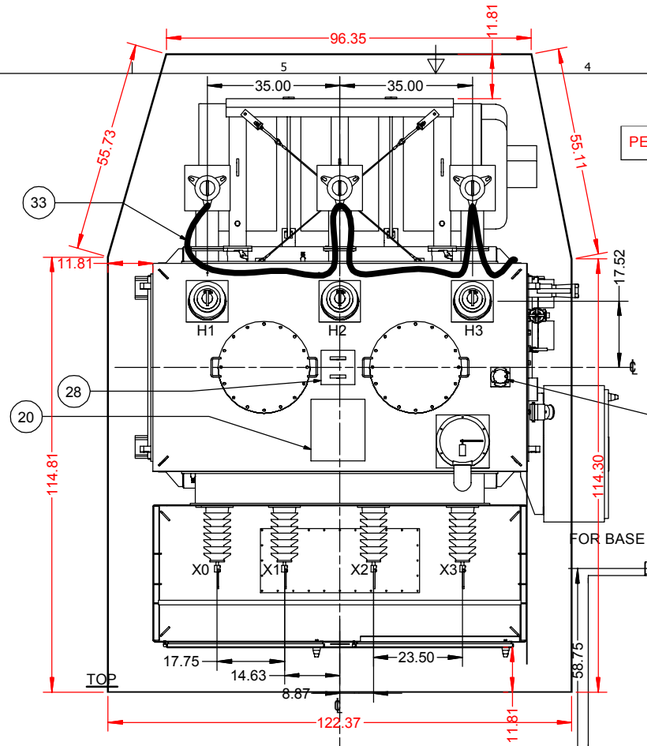
Sincerely,

10/30/13

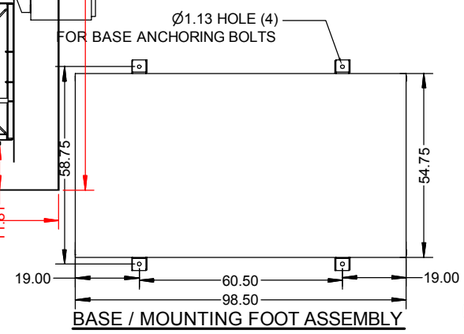
Parminder Panesar
VTC Roanoke Plant Manager

ITEMS:
1. PROVISION ON BASE FOR SKIDDING
2. TRANSFORMER LIFTING LUGS
3. STAINLESS STEEL GROUND PADS (2) ON DIAGONALLY OPPOSITE SIDE OF TANK
4. STAINLESS STEEL DIAGRAMMATIC NAMEPLATE
5. 20" DIA, MANHOLE (2) WITH COVER (BOLTED AND GASKETED)
6. WELDED TOP COVER WITH LIFTING EYES (4) FOR COVER ONLY, SLOPED FOR DRAINAGE
7. COOLING RADIATORS, HOT DIPPED GALVANIZED, UNPAINTED, DEMOUNTABLE WITH ISOLATION VALVES
8. HV DRAWLEAD BUSHING, 46 kV, 250 kV BIL (3) WITH 4 HOLE NEMA PAD
9. LV BOTTOM CONNECTED BUSHING, 34.5 kV, 200 kV BIL, (4) WITH 4 HOLE NEMA PAD
10. 2" COMBINATION LOWER DRAIN AND FILTER VALVE WITH SAMPLER, AND PLUG
11. 1" UPPER FILTER VALVE, WITH PLUG
12. VTC PRESSURIZATION TEST POINT WITH 1/2" BALL VALVE
13. LIQUID LEVEL GAUGE WITH CONTACTS, GAUGE CENTER IS AT 25deg C OIL LEVEL
14. OIL TEMPERATURE GAUGE WITH CONTACTS
15. PRESSURE VACUUM GAUGE
16. PRESSURE RELIEF DEVICE WITH CONTACTS DIRECTIONAL SHROUD AND FLAG
17. DE-ENERGIZED NO LOAD MANUAL TAP CHANGER WITH PROVISION FOR PADLOCKING
18. CONTROL BOX, NEMA 4, 48 x 36 x 16 , WITH BOLTED BOTTOM PLATE
19. JACK PADS (4) WITH PULLING EYES
20. BOX FOR CT FEED-THRU'S AND CORE GROUND BUSHING
21. COOLING FANS
22. WINDING TEMPERATURE GAUGE, SIMULATION SYSTEM, WITH CONTACTS
23. BOLTED, GASKETED PLATE FOR ACCESS TO DETC
24. THERMOWELLS FOR TEMPERATURE GAUGES
25. SUDDEN PRESSURE RELAY
26. HV STATION CLASS ARRESTER, POLYMER, 48 kV, 39 kV MCOV
27. LV STATION CLASS ARRESTER, POLYMER, 30 kV, 24.4 kV MCOV
28. FALL PROTECTION PLATE
29. LV AIR TERMINAL CHAMBER, BOLTED ON, WITH FRONT HINGED DOORS, CABLE SUPPORTS, BOTTOM PLATE AND THERMOSTATICALLY CONTROLLED HEATERS
30. RTD THERMOWELL
31. SUDDEN PRESSURE RELAY, UNDER OIL TYPE WITH SHUT OFF VALVE
32. 4/0 BARE CU CABLE FROM X0 TO BASE GROUND PAD
33. 4/0 BARE CU CABLE FROM LV/HV ARRESTERS TO BASE GROUND PADS

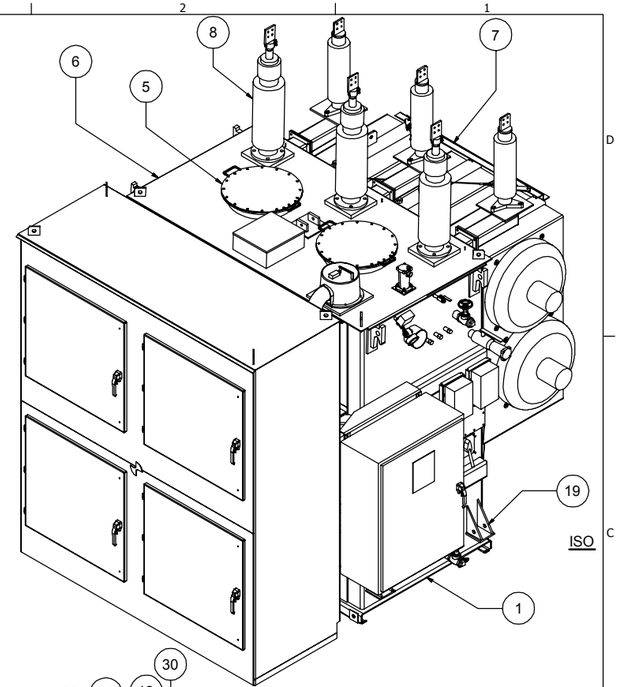
NOTES:
1. TYPE II MINERAL OIL FILLED TRANSFORMER, APPROXIMATELY 1606 GALLONS
2. OUTDOOR SERVICE
3. PAINT: ANSI-70 URETHANE OVER EPOXY (VTC PAINT SYSTEM III), TANK INSIDE AND TOP COVER WITH ANTI-SKID COATING
4. TOUCH UP PAINT KIT PROVIDED
5. UNIT DESIGNED FOR SEALED TYPE OIL PRESERVATION
6. SEE 20 SERIES SHEETS FOR SCHEMATIC
7. CG IS FULLY ASSEMBLED
8. UNIT DESIGNED FOR FULL VACUUM FILLING
9. UNIT SHIPS FULLY ASSEMBLED AND OIL FILLED, HV SPADES SHIP INSIDE CONTROL BOX
10. UNIT DESIGNED FOR OPERATION AT MINIMUM AMBIENT - 40deg C
11. TANK SEAMS ARE WELDED INSIDE AND OUTSIDE-NO CORNER WELDS WITHIN 6" OF CORNER
12. UNIT SHIPS WITH IMPACT RECORDER
13. 60/60 EXTENDED WARRANTY IS PROVIDED



PERIMETER = 558.67 in.



BASE / MOUNTING FOOT ASSEMBLY



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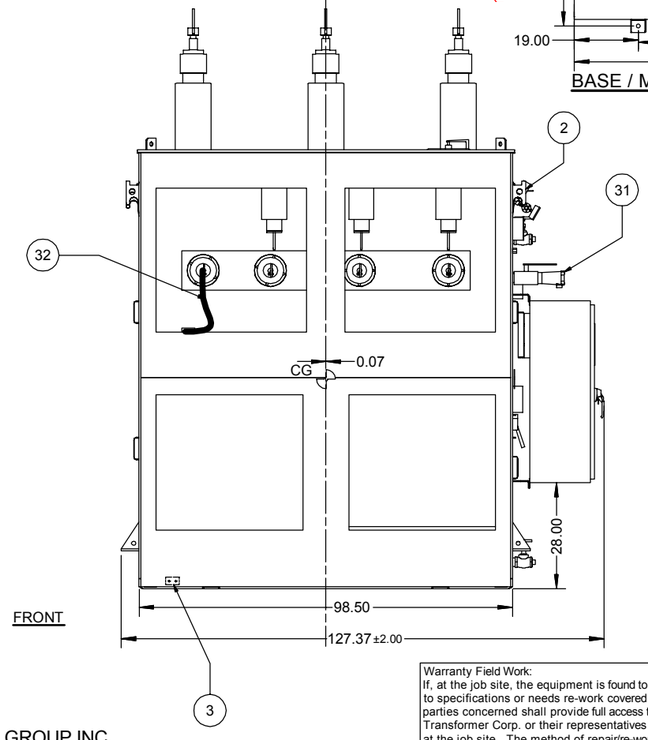
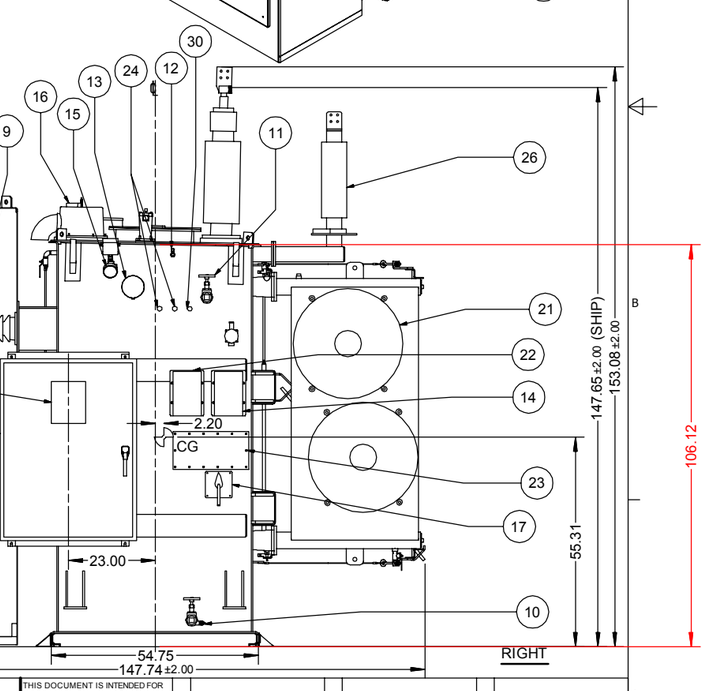


FRONT



RIGHT

Liquid Filled Transformer Data:

MOD/SN: 477500A176	MVA: 7.5/10 AT 65°C RISE
3 PHASE, 60 Hz	CLASS: ONAN/ONAF
IMP: 5.625 % NOM.	WT: 50,150 LBS

WINDINGS: COPPER
TAPS: ± 2 X 2.5 %
HV: 44,000 DELTA, 250 kV BIL, 131 A NOM @ 10 MVA
LV: 27,600 GrdY/15,935 , 200 kV BIL, 209 A @ 10 MVA

Customer: KA FACTOR GROUP INC.

Warranty Field Work:
If, at the job site, the equipment is found to have not conformed to specifications or needs re-work covered under warranty, all parties concerned shall provide full access to Virginia Transformer Corp. or their representatives to work on the unit(s) at the job site. The method of repair/re-work will be determined solely by Virginia Transformer Corp.

TOLERANCES
IF NO TOLERANCES SHOWN ±0.5(12.7) OTHERWISE:
Δ ±0.25(6.3)
☐ ±1.0(25.4)

ALL DIMENSIONS IN INCHES & IN mm IF SHOWN IN PARENTHESIS

C028A-101.idw

VIRGINIA TRANSFORMER CORP.
220 GLADE VIEW DR., N.E. ROANOKE, VA 24012
(540) 345-9892

TITLE: DIMENSIONAL OUTLINE JOB # C028A
DWN: HGB | CHK: 3NAD | DATE: 08/27/13
D | 477500A176 | SHEET 101 | REVISION 0

10 MVA Substation Transformer - Sound Power Calc. based on Manufacturer-specified rating of 69 dBA (ONAF)

Transformer perimeter at measurement distance of 0.3m	558.7	in.
Transformer Height	106.12	in.
Vertical surface area	59286	$in.^2$
Horizontal surface area (transformer top + 0.3m)	16391	$in.^2$
	75677	$in.^2$
	526	ft^2
Total Surface area	48.8	m^2

Lw = Lp + 10 x log (S)

Lp	69	dB
Lw	85.89	dB

Centre Frequency	Corr1	Corr2	PWL (Linear)	add 5 dB	A-weighted correction	PWL (A-weighted)
31.5	-1	-2.4	82.49	87.49	-39.4	43.09
63	5	-2.4	88.49	93.49	-26.2	62.29
125	7	-2.4	90.49	95.49	-16.1	74.39
250	2	-2.4	85.49	90.49	-8.6	76.89
500	2	-2.4	85.49	90.49	-3.2	82.29
1000	-4	-2.4	79.49	84.49	0	79.49
2000	-9	-2.4	74.49	79.49	1.2	75.69
4000	-14	-2.4	69.49	74.49	1	70.49
8000	-21	-2.4	62.49	67.49	-1.1	61.39
Overall:			**94.5**	**99.5**		**85.9**

Lp: Sound pressure level
Lw: Sound Power Level

Appendix B

CADNA NOISE MODELLING AND CALCULATIONS

Receiver: Existing Potential Noise Receptor
ID: R1
X: 345897
Y: 4896443
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	390.52	3.25	0	62.83	0	-0.62	0	0	7.52	0	0	0	0	0	0	30.58	30.58
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	559.96	3.25	0	65.96	0	-0.51	0	0	8.95	0	0	0	0	0	0	25.9	25.9
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	586.54	3.25	0	66.37	0	-0.49	0	0	9.12	0	0	0	0	0	0	25.31	25.31
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	200.5	3.25	0	57.04	0	0.34	0	0	3.23	0	0	0	0	0	0	28.45	28.45
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	566.43	3.25	0	66.06	0	-0.5	0	0	9	0	0	0	0	0	0	22.76	22.76
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	263.33	3.25	0	59.41	0	0.35	0	0	3.84	0	0	0	0	0	0	25.46	25.46
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	204.9	3.25	0	57.23	0	-0.42	0	0	0.17	0	0	0	0	0	0	28.77	28.77
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	264.47	3.25	0	59.45	0	-0.85	0	0	0.21	0	0	0	0	0	0	26.93	26.93
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	296.82	3.5	0	60.45	0	-0.23	0	0	0.92	0	0	0	0	0	0	24.73	24.73
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	395.04	3.25	0	62.93	0	-1.32	0	0	0.3	0	0	0	0	0	0	23.83	23.83
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	563.57	3.25	0	66.02	0	-1.59	0	0	0.41	0	0	0	0	0	0	20.9	20.9
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	589.75	3.25	0	66.41	0	-1.62	0	0	0.43	0	0	0	0	0	0	20.52	20.52
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	569.65	3.25	0	66.11	0	-1.6	0	0	0.42	0	0	0	0	0	0	17.21	17.21
/alue D/N:	0	0																									
Level D/N:	37.1475	37.1475																									

Receiver: Existing Potential Noise Receptor
ID: R2
X: 345956
Y: 4896152
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	544.25	3.25	0	65.72	0	-0.52	0	0	8.85	0	0	0	0	0	0	26.27	26.27
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	695.89	3.25	0	67.85	0	-0.41	0	0	9.72	0	0	0	0	0	0	23.16	23.16
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	806.49	3.25	0	69.13	0	-0.35	0	0	10.21	0	0	0	0	0	0	21.32	21.32
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	742.12	3.25	0	68.41	0	-0.39	0	0	9.93	0	0	0	0	0	0	19.36	19.36
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	404.31	3.25	0	63.13	0	0.46	0	0	4.75	0	0	0	0	0	0	20.71	20.71
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	287.98	3.5	0	60.19	0	-0.21	0	0	0.9	0	0	0	0	0	0	25	25
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	544.19	3.25	0	65.71	0	0.55	0	0	5.29	0	0	0	0	0	0	17.5	17.5
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	405.78	3.25	0	63.17	0	-1.34	0	0	0.31	0	0	0	0	0	0	23.61	23.61
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	544.3	3.25	0	65.72	0	-1.57	0	0	0.4	0	0	0	0	0	0	21.19	21.19
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	546.97	3.25	0	65.76	0	-1.57	0	0	0.4	0	0	0	0	0	0	21.15	21.15
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	698.45	3.25	0	67.88	0	-1.72	0	0	0.5	0	0	0	0	0	0	19.08	19.08
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	808.46	3.25	0	69.15	0	-1.8	0	0	0.57	0	0	0	0	0	0	17.83	17.83
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	744.27	3.25	0	68.43	0	-1.76	0	0	0.53	0	0	0	0	0	0	14.94	14.94
/alue D/N:	0	0																									
Level D/N:	33.0244	33.0244																									

Receiver: Existing Potential Noise Receptor
ID: R3
X: 346034
Y: 4896160
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	499.16	3.25	0	64.96	0	-0.55	0	0	8.52	0	0	0	0	0	0	27.38	27.38
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	642.2	3.25	0	67.15	0	-0.45	0	0	9.44	0	0	0	0	0	0	24.17	24.17

Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	771.63	3.25	0	68.75	0	-0.37	0	0	10.06	0	0	0	0	0	0	21.87	21.87
Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	696.37	3.25	0	67.86	0	-0.41	0	0	9.72	0	0	0	0	0	0	20.15	20.15
Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	227.87	3.5	0	58.15	0	-0.07	0	0	0.74	0	0	0	0	0	0	27.05	27.05
Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	381.01	3.25	0	62.62	0	0.44	0	0	4.63	0	0	0	0	0	0	21.37	21.37
Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	539.81	3.25	0	65.64	0	0.55	0	0	5.28	0	0	0	0	0	0	17.59	17.59
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	381.55	3.25	0	62.63	0	-1.29	0	0	0.29	0	0	0	0	0	0	24.1	24.1
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	501.35	3.25	0	65	0	-1.51	0	0	0.37	0	0	0	0	0	0	21.88	21.88
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	539.35	3.25	0	65.64	0	-1.56	0	0	0.4	0	0	0	0	0	0	21.27	21.27
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	644.5	3.25	0	67.18	0	-1.67	0	0	0.46	0	0	0	0	0	0	19.77	19.77
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	773.18	3.25	0	68.77	0	-1.78	0	0	0.54	0	0	0	0	0	0	18.21	18.21
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	698.21	3.25	0	67.88	0	-1.72	0	0	0.5	0	0	0	0	0	0	15.48	15.48
/alue D/N:	0	0																								
Level D/N:	33.9944	33.9944																								

Receiver: Existing Potential Noise Receptor
ID: R4
X: 345830
Y: 4896025
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	720.16	3.25	0	68.15	0	-0.4	0	0	9.83	0	0	0	0	0	0	22.73	22.73
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	874.24	3.25	0	69.83	0	-0.31	0	0	10.47	0	0	0	0	0	0	20.32	20.32
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	974.95	3.25	0	70.78	0	-0.26	0	0	10.83	0	0	0	0	0	0	18.96	18.96
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	917.63	3.25	0	70.25	0	-0.29	0	0	10.63	0	0	0	0	0	0	16.72	16.72
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	568.55	3.25	0	66.1	0	0.56	0	0	5.36	0	0	0	0	0	0	17.04	17.04
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	466.5	3.5	0	64.38	0	-0.37	0	0	1.35	0	0	0	0	0	0	20.52	20.52
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	685.45	3.25	0	67.72	0	0.61	0	0	5.67	0	0	0	0	0	0	15.06	15.06
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	570.71	3.25	0	66.13	0	-1.6	0	0	0.42	0	0	0	0	0	0	20.79	20.79
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	686.28	3.25	0	67.73	0	-1.71	0	0	0.49	0	0	0	0	0	0	19.23	19.23
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	723.09	3.25	0	68.18	0	-1.74	0	0	0.51	0	0	0	0	0	0	18.78	18.78
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	876.86	3.25	0	69.86	0	-1.85	0	0	0.61	0	0	0	0	0	0	17.13	17.13
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	977.23	3.25	0	70.8	0	-1.92	0	0	0.67	0	0	0	0	0	0	16.19	16.19
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	919.92	3.25	0	70.27	0	-1.88	0	0	0.63	0	0	0	0	0	0	13.12	13.12
/alue D/N:	0	0																								
Level D/N:	30.0409	30.0409																								

Receiver: Existing Potential Noise Receptor
ID: R5
X: 346827
Y: 4896502
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	464.44	3.25	0	64.34	0	-0.58	0	0	8.23	0	0	0	0	0	0	28.32	28.32
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	587.03	3.25	0	66.37	0	-0.49	0	0	9.13	0	0	0	0	0	0	25.3	25.3
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	679.48	3.25	0	67.64	0	-0.42	0	0	9.64	0	0	0	0	0	0	23.46	23.46
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	549.01	3.25	0	65.79	0	-0.51	0	0	8.88	0	0	0	0	0	0	23.16	23.16
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	460.78	3.25	0	64.27	0	-1.45	0	0	0.35	0	0	0	0	0	0	22.58	22.58
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	754.91	3.25	0	68.56	0	0.63	0	0	5.82	0	0	0	0	0	0	14.05	14.05
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	582.11	3.25	0	66.3	0	-1.61	0	0	0.42	0	0	0	0	0	0	20.63	20.63
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	878.69	3.25	0	69.88	0	0.66	0	0	6.08	0	0	0	0	0	0	12.44	12.44
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	672.07	3.5	0	67.55	0	-0.4	0	0	1.82	0	0	0	0	0	0	16.91	16.91
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	675.4	3.25	0	67.59	0	-1.7	0	0	0.48	0	0	0	0	0	0	19.37	19.37
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	749.92	3.25	0	68.5	0	-1.76	0	0	0.53	0	0	0	0	0	0	18.47	18.47
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	545.56	3.25	0	65.74	0	-1.57	0	0	0.4	0	0	0	0	0	0	17.57	17.57
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	874.79	3.25	0	69.84	0	-1.85	0	0	0.61	0	0	0	0	0	0	17.15	17.15

/alue D/N: 0 0
Level D/N: 33.2226 33.2226

Receiver: Existing Potential Noise Receptor
ID: R6
X: 347202
Y: 4896704
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	801.18	3.25	0	69.07	0	-0.35	0	0	10.19	0	0	0	0	0	0	21.4	21.4
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	949.21	3.25	0	70.55	0	-0.27	0	0	10.74	0	0	0	0	0	0	19.3	19.3
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	956.63	3.25	0	70.61	0	-0.27	0	0	10.76	0	0	0	0	0	0	19.2	19.2
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	852.31	3.25	0	69.61	0	-0.32	0	0	10.39	0	0	0	0	0	0	17.63	17.63
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1141	3.25	0	72.15	0	0.71	0	0	6.58	0	0	0	0	0	0	9.62	9.62
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	797.19	3.25	0	69.03	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.95	17.95
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1232	3.25	0	72.81	0	0.73	0	0	6.74	0	0	0	0	0	0	8.77	8.77
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	944.32	3.25	0	70.5	0	-1.9	0	0	0.65	0	0	0	0	0	0	16.49	16.49
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	951.66	3.25	0	70.57	0	-1.9	0	0	0.65	0	0	0	0	0	0	16.42	16.42
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1089.9	3.5	0	71.75	0	-0.36	0	0	2.7	0	0	0	0	0	0	11.78	11.78
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1136.1	3.25	0	72.11	0	-2.01	0	0	0.76	0	0	0	0	0	0	14.89	14.89
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1228	3.25	0	72.78	0	-2.07	0	0	0.81	0	0	0	0	0	0	14.22	14.22
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	848.33	3.25	0	69.57	0	-1.83	0	0	0.59	0	0	0	0	0	0	13.81	13.81

/alue D/N: 0 0
Level D/N: 27.9813 27.9813

Receiver: Existing Potential Noise Receptor
ID: R7
X: 347324
Y: 4896697
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	923.06	3.25	0	70.3	0	-0.28	0	0	10.65	0	0	0	0	0	0	19.64	19.64
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1070.3	3.25	0	71.59	0	-0.21	0	0	11.14	0	0	0	0	0	0	17.8	17.8
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1077.5	3.25	0	71.65	0	-0.21	0	0	11.16	0	0	0	0	0	0	17.71	17.71
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	974.46	3.25	0	70.78	0	-0.26	0	0	10.83	0	0	0	0	0	0	15.97	15.97
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1260.9	3.25	0	73.01	0	0.74	0	0	6.79	0	0	0	0	0	0	8.51	8.51
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	919.06	3.25	0	70.27	0	-1.88	0	0	0.63	0	0	0	0	0	0	16.72	16.72
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1354	3.25	0	73.63	0	0.76	0	0	6.96	0	0	0	0	0	0	7.71	7.71
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1065.4	3.25	0	71.55	0	-1.97	0	0	0.72	0	0	0	0	0	0	15.45	15.45
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1072.5	3.25	0	71.61	0	-1.98	0	0	0.72	0	0	0	0	0	0	15.39	15.39
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1203.5	3.5	0	72.61	0	-0.34	0	0	2.92	0	0	0	0	0	0	10.68	10.68
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1256	3.25	0	72.98	0	-2.08	0	0	0.82	0	0	0	0	0	0	14.02	14.02
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1350	3.25	0	73.61	0	-2.13	0	0	0.87	0	0	0	0	0	0	13.39	13.39
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	970.47	3.25	0	70.74	0	-1.91	0	0	0.66	0	0	0	0	0	0	12.65	12.65

/alue D/N: 0 0
Level D/N: 26.6071 26.6071

Receiver: Existing Potential Noise Receptor
ID: R8
X: 347404
Y: 4896746
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN

Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1004.7	3.25	0	71.04	0	-0.24	0	0	10.93	0	0	0	0	0	0	18.59	18.59
Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1141.6	3.25	0	72.15	0	-0.18	0	0	11.35	0	0	0	0	0	0	16.99	16.99
Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1162	3.25	0	72.3	0	-0.17	0	0	11.41	0	0	0	0	0	0	16.76	16.76
Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1051.5	3.25	0	71.44	0	-0.22	0	0	11.08	0	0	0	0	0	0	15.02	15.02
Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1347	3.25	0	73.59	0	0.76	0	0	6.94	0	0	0	0	0	0	7.77	7.77
Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1434.9	3.25	0	74.14	0	0.78	0	0	7.1	0	0	0	0	0	0	7.05	7.05
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1000.7	3.25	0	71.01	0	-1.93	0	0	0.68	0	0	0	0	0	0	15.99	15.99
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1136.7	3.25	0	72.11	0	-2.01	0	0	0.76	0	0	0	0	0	0	14.89	14.89
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1157	3.25	0	72.27	0	-2.03	0	0	0.77	0	0	0	0	0	0	14.73	14.73
Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1294.6	3.5	0	73.24	0	-0.32	0	0	3.1	0	0	0	0	0	0	9.85	9.85
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1342.1	3.25	0	73.56	0	-2.13	0	0	0.87	0	0	0	0	0	0	13.44	13.44
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1430.9	3.25	0	74.11	0	-2.17	0	0	0.92	0	0	0	0	0	0	12.88	12.88
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1047.5	3.25	0	71.4	0	-1.96	0	0	0.71	0	0	0	0	0	0	11.99	11.99
/alue D/N: 0	0																									
Level D/N: 25.795	25.795																									

Receiver: Existing Potential Noise Receptor
ID: R9
X: 347471
Y: 4896793
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1075.2	3.25	0	71.63	0	-0.21	0	0	11.15	0	0	0	0	0	0	17.74	17.74
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1203.3	3.25	0	72.61	0	-0.15	0	0	11.53	0	0	0	0	0	0	16.32	16.32
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1234.6	3.25	0	72.83	0	-0.14	0	0	11.62	0	0	0	0	0	0	16	16
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1118.1	3.25	0	71.97	0	-0.19	0	0	11.28	0	0	0	0	0	0	14.25	14.25
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1420.9	3.25	0	74.05	0	0.77	0	0	7.07	0	0	0	0	0	0	7.16	7.16
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1504.1	3.25	0	74.55	0	0.79	0	0	7.22	0	0	0	0	0	0	6.5	6.5
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1071.3	3.25	0	71.6	0	-1.98	0	0	0.72	0	0	0	0	0	0	15.4	15.4
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1198.3	3.25	0	72.57	0	-2.05	0	0	0.79	0	0	0	0	0	0	14.43	14.43
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1229.7	3.25	0	72.8	0	-2.07	0	0	0.81	0	0	0	0	0	0	14.2	14.2
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1373.2	3.5	0	73.75	0	-0.3	0	0	3.25	0	0	0	0	0	0	9.18	9.18
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1416	3.25	0	74.02	0	-2.16	0	0	0.91	0	0	0	0	0	0	12.97	12.97
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1500.1	3.25	0	74.52	0	-2.2	0	0	0.95	0	0	0	0	0	0	12.47	12.47
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1114.1	3.25	0	71.94	0	-2	0	0	0.74	0	0	0	0	0	0	11.46	11.46
/alue D/N: 0	0																										
Level D/N: 25.1433	25.1433																										

Receiver: Existing Potential Noise Receptor
ID: R10
X: 346102
Y: 4897725
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	848.21	3.25	0	69.57	0	-0.32	0	0	10.37	0	0	0	0	0	0	20.69	20.69
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1080.2	3.25	0	71.67	0	-0.21	0	0	11.17	0	0	0	0	0	0	17.68	17.68
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1124.8	3.25	0	72.02	0	-0.19	0	0	11.3	0	0	0	0	0	0	17.17	17.17
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	978.74	3.25	0	70.81	0	-0.26	0	0	10.84	0	0	0	0	0	0	15.92	15.92
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1037.4	3.25	0	71.32	0	0.69	0	0	6.39	0	0	0	0	0	0	10.66	10.66
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1186.4	3.25	0	72.48	0	0.72	0	0	6.66	0	0	0	0	0	0	9.19	9.19
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	849.23	3.25	0	69.58	0	-1.83	0	0	0.59	0	0	0	0	0	0	17.4	17.4
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1036.9	3.25	0	71.32	0	-1.96	0	0	0.7	0	0	0	0	0	0	15.68	15.68
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1081.3	3.25	0	71.68	0	-1.98	0	0	0.73	0	0	0	0	0	0	15.32	15.32
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1125.5	3.25	0	72.03	0	-2.01	0	0	0.75	0	0	0	0	0	0	14.97	14.97
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1186.3	3.25	0	72.48	0	-2.04	0	0	0.78	0	0	0	0	0	0	14.52	14.52

	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1387.9	3.5	0	73.85	0	-0.3	0	0	3.28	0	0	0	0	0	0	9.05	9.05
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	979.77	3.25	0	70.82	0	-1.92	0	0	0.67	0	0	0	0	0	0	12.57	12.57
/alue D/N:	0	0																									
Level D/N:	26.9812	26.9812																									

Receiver: Existing Potential Noise Receptor
ID: R11
X: 346018
Y: 4897382
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	550.15	3.25	0	65.81	0	-0.51	0	0	8.89	0	0	0	0	0	0	26.13	26.13
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	793.55	3.25	0	68.99	0	-0.36	0	0	10.15	0	0	0	0	0	0	21.52	21.52
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	806.11	3.25	0	69.13	0	-0.35	0	0	10.21	0	0	0	0	0	0	21.33	21.33
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	689.81	3.25	0	67.77	0	-0.42	0	0	9.69	0	0	0	0	0	0	20.27	20.27
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	687.68	3.25	0	67.75	0	0.61	0	0	5.67	0	0	0	0	0	0	15.03	15.03
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	552.48	3.25	0	65.85	0	-1.58	0	0	0.41	0	0	0	0	0	0	21.07	21.07
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	844.8	3.25	0	69.54	0	0.65	0	0	6.01	0	0	0	0	0	0	12.86	12.86
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	687.41	3.25	0	67.74	0	-1.71	0	0	0.49	0	0	0	0	0	0	19.22	19.22
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	795.49	3.25	0	69.01	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.97	17.97
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	807.56	3.25	0	69.14	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.84	17.84
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	845.14	3.25	0	69.54	0	-1.83	0	0	0.59	0	0	0	0	0	0	17.45	17.45
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1054.8	3.5	0	71.46	0	-0.36	0	0	2.63	0	0	0	0	0	0	12.14	12.14
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	691.76	3.25	0	67.8	0	-1.71	0	0	0.49	0	0	0	0	0	0	15.56	15.56
/alue D/N:	0	0																									
Level D/N:	31.0989	31.0989																									

Receiver: Existing Potential Noise Receptor
ID: R12
X: 345988
Y: 4897336
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	525.38	3.25	0	65.41	0	-0.53	0	0	8.71	0	0	0	0	0	0	26.72	26.72
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	769.27	3.25	0	68.72	0	-0.37	0	0	10.05	0	0	0	0	0	0	21.91	21.91
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	771.83	3.25	0	68.75	0	-0.37	0	0	10.06	0	0	0	0	0	0	21.87	21.87
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	665.94	3.25	0	67.47	0	-0.43	0	0	9.57	0	0	0	0	0	0	20.71	20.71
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	640.26	3.25	0	67.13	0	0.59	0	0	5.56	0	0	0	0	0	0	15.78	15.78
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	528.1	3.25	0	65.45	0	-1.55	0	0	0.39	0	0	0	0	0	0	21.45	21.45
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	801.52	3.25	0	69.08	0	0.64	0	0	5.92	0	0	0	0	0	0	13.42	13.42
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	640.16	3.25	0	67.13	0	-1.67	0	0	0.46	0	0	0	0	0	0	19.82	19.82
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	771.42	3.25	0	68.75	0	-1.78	0	0	0.54	0	0	0	0	0	0	18.23	18.23
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	773.54	3.25	0	68.77	0	-1.78	0	0	0.54	0	0	0	0	0	0	18.21	18.21
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	802.07	3.25	0	69.08	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.9	17.9
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1014.4	3.5	0	71.12	0	-0.37	0	0	2.55	0	0	0	0	0	0	12.57	12.57
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	668.14	3.25	0	67.5	0	-1.69	0	0	0.48	0	0	0	0	0	0	15.86	15.86
/alue D/N:	0	0																									
Level D/N:	31.5917	31.5917																									

Receiver: Existing Potential Noise Receptor
ID: R13
X: 345922
Y: 4897351
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	575.63	3.25	0	66.2	0	-0.5	0	0	9.05	0	0	0	0	0	0	25.55	25.55
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	810.35	3.25	0	69.17	0	-0.35	0	0	10.22	0	0	0	0	0	0	21.26	21.26
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	818.74	3.25	0	69.26	0	-0.34	0	0	10.26	0	0	0	0	0	0	21.13	21.13
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	716.21	3.25	0	68.1	0	-0.4	0	0	9.81	0	0	0	0	0	0	19.8	19.8
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	656.76	3.25	0	67.35	0	0.6	0	0	5.6	0	0	0	0	0	0	15.51	15.51
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	825.92	3.25	0	69.34	0	0.65	0	0	5.97	0	0	0	0	0	0	13.1	13.1
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	578.69	3.25	0	66.25	0	-1.61	0	0	0.42	0	0	0	0	0	0	20.68	20.68
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	657.07	3.25	0	67.35	0	-1.68	0	0	0.47	0	0	0	0	0	0	19.6	19.6
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	812.39	3.25	0	69.2	0	-1.81	0	0	0.57	0	0	0	0	0	0	17.79	17.79
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	821.09	3.25	0	69.29	0	-1.81	0	0	0.57	0	0	0	0	0	0	17.69	17.69
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	826.85	3.25	0	69.35	0	-1.82	0	0	0.58	0	0	0	0	0	0	17.63	17.63
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1043.2	3.5	0	71.37	0	-0.36	0	0	2.61	0	0	0	0	0	0	12.27	12.27
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	718.62	3.25	0	68.13	0	-1.74	0	0	0.51	0	0	0	0	0	0	15.24	15.24
/alue D/N:	0	0																									
Level D/N:	30.8249	30.8249																									

Receiver: Existing Potential Noise Receptor
ID: R14
X: 345956
Y: 4896996
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	332.06	3.25	0	61.42	0	-0.65	0	0	6.83	0	0	0	0	0	0	32.71	32.71
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	485.22	3.25	0	64.72	0	-0.56	0	0	8.41	0	0	0	0	0	0	27.75	27.75
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	541.77	3.25	0	65.68	0	-0.52	0	0	8.83	0	0	0	0	0	0	26.33	26.33
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	452.44	3.25	0	64.11	0	-0.59	0	0	8.13	0	0	0	0	0	0	25.66	25.66
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	300.34	3.25	0	60.55	0	0.37	0	0	4.13	0	0	0	0	0	0	24	24
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	300.55	3.25	0	60.56	0	-1.02	0	0	0.24	0	0	0	0	0	0	25.97	25.97
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	471.75	3.25	0	64.47	0	0.51	0	0	5.04	0	0	0	0	0	0	19.03	19.03
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	336.83	3.25	0	61.55	0	-1.16	0	0	0.26	0	0	0	0	0	0	25.09	25.09
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	473.01	3.25	0	64.5	0	-1.47	0	0	0.35	0	0	0	0	0	0	22.36	22.36
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	488.27	3.25	0	64.77	0	-1.49	0	0	0.36	0	0	0	0	0	0	22.1	22.1
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	545.06	3.25	0	65.73	0	-1.57	0	0	0.4	0	0	0	0	0	0	21.18	21.18
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	692.54	3.5	0	67.81	0	-0.4	0	0	1.87	0	0	0	0	0	0	16.6	16.6
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	455.96	3.25	0	64.18	0	-1.44	0	0	0.34	0	0	0	0	0	0	19.06	19.06
/alue D/N:	0	0																									
Level D/N:	36.9001	36.9001																									

Receiver: Existing Potential Noise Receptor
ID: R15
X: 345816
Y: 4896831
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	460.34	3.25	0	64.26	0	-0.58	0	0	8.2	0	0	0	0	0	0	28.43	28.43
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	487.04	3.25	0	64.75	0	-0.56	0	0	8.42	0	0	0	0	0	0	27.7	27.7
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	602.47	3.25	0	66.6	0	-0.48	0	0	9.22	0	0	0	0	0	0	24.97	24.97
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	204.81	3.25	0	57.23	0	0.34	0	0	3.28	0	0	0	0	0	0	28.22	28.22
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	539.52	3.25	0	65.64	0	-0.52	0	0	8.82	0	0	0	0	0	0	23.38	23.38
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	207.83	3.25	0	57.35	0	-0.45	0	0	0.17	0	0	0	0	0	0	28.67	28.67
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	389	3.25	0	62.8	0	0.45	0	0	4.68	0	0	0	0	0	0	21.14	21.14
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	392.32	3.25	0	62.87	0	-1.31	0	0	0.3	0	0	0	0	0	0	23.88	23.88
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	465.29	3.25	0	64.35	0	-1.46	0	0	0.35	0	0	0	0	0	0	22.5	22.5

Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	491.5	3.25	0	64.83	0	-1.5	0	0	0.37	0	0	0	0	0	0	22.04	22.04
Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	609.06	3.5	0	66.69	0	-0.4	0	0	1.68	0	0	0	0	0	0	17.9	17.9
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	606.35	3.25	0	66.65	0	-1.64	0	0	0.44	0	0	0	0	0	0	20.28	20.28
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	543.5	3.25	0	65.7	0	-1.57	0	0	0.4	0	0	0	0	0	0	17.6	17.6
/alue D/N: 0	0																								
Level D/N: 36.1853	36.1853																								

Receiver: Existing Potential Noise Receptor
ID: R16
X: 345677
Y: 4896662
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	575.36	3.25	0	66.2	0	-0.5	0	0	9.05	0	0	0	0	0	0	25.56	25.56
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	638.64	3.25	0	67.11	0	-0.45	0	0	9.42	0	0	0	0	0	0	24.24	24.24
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	724.44	3.25	0	68.2	0	-0.4	0	0	9.85	0	0	0	0	0	0	22.66	22.66
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	686.05	3.25	0	67.73	0	-0.42	0	0	9.67	0	0	0	0	0	0	20.34	20.34
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	294.98	3.25	0	60.4	0	0.37	0	0	4.09	0	0	0	0	0	0	24.2	24.2
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	414.67	3.25	0	63.35	0	0.47	0	0	4.8	0	0	0	0	0	0	20.44	20.44
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	298.95	3.25	0	60.51	0	-1.01	0	0	0.23	0	0	0	0	0	0	26.01	26.01
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	419.45	3.25	0	63.45	0	-1.37	0	0	0.32	0	0	0	0	0	0	23.34	23.34
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	580.34	3.25	0	66.27	0	-1.61	0	0	0.42	0	0	0	0	0	0	20.65	20.65
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	593.58	3.5	0	66.47	0	-0.4	0	0	1.65	0	0	0	0	0	0	18.16	18.16
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	643.3	3.25	0	67.17	0	-1.67	0	0	0.46	0	0	0	0	0	0	19.78	19.78
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	728.43	3.25	0	68.25	0	-1.74	0	0	0.52	0	0	0	0	0	0	18.72	18.72
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	690	3.25	0	67.78	0	-1.71	0	0	0.49	0	0	0	0	0	0	15.58	15.58
/alue D/N: 0	0																										
Level D/N: 33.6042	33.6042																										

Receiver: Existing Potential Noise Receptor
ID: R17
X: 345467
Y: 4895969
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1011.9	3.25	0	71.1	0	-0.24	0	0	10.95	0	0	0	0	0	0	18.5	18.5
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1178.1	3.25	0	72.42	0	-0.16	0	0	11.46	0	0	0	0	0	0	16.59	16.59
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1226.2	3.25	0	72.77	0	-0.14	0	0	11.6	0	0	0	0	0	0	16.08	16.08
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1200.5	3.25	0	72.59	0	-0.15	0	0	11.53	0	0	0	0	0	0	13.35	13.35
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	831.95	3.25	0	69.4	0	0.65	0	0	5.99	0	0	0	0	0	0	13.02	13.02
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	884.05	3.25	0	69.93	0	0.66	0	0	6.09	0	0	0	0	0	0	12.38	12.38
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	798.85	3.5	0	69.05	0	-0.4	0	0	2.1	0	0	0	0	0	0	15.12	15.12
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	835.6	3.25	0	69.44	0	-1.82	0	0	0.58	0	0	0	0	0	0	17.54	17.54
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	886.33	3.25	0	69.95	0	-1.86	0	0	0.61	0	0	0	0	0	0	17.04	17.04
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1015.8	3.25	0	71.14	0	-1.94	0	0	0.69	0	0	0	0	0	0	15.86	15.86
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1181.3	3.25	0	72.45	0	-2.04	0	0	0.78	0	0	0	0	0	0	14.55	14.55
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1229.5	3.25	0	72.79	0	-2.07	0	0	0.81	0	0	0	0	0	0	14.2	14.2
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1203.4	3.25	0	72.61	0	-2.05	0	0	0.79	0	0	0	0	0	0	10.79	10.79
/alue D/N: 0	0																										
Level D/N: 26.6392	26.6392																										

Receiver: Existing Potential Noise Receptor
ID: R18
X: 345743
Y: 4895964

Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	821.2	3.25	0	69.29	0	-0.34	0	0	10.27	0	0	0	0	0	0	21.1	21.1
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	977.6	3.25	0	70.8	0	-0.26	0	0	10.84	0	0	0	0	0	0	18.93	18.93
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1069.9	3.25	0	71.59	0	-0.21	0	0	11.14	0	0	0	0	0	0	17.8	17.8
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1018	3.25	0	71.15	0	-0.24	0	0	10.97	0	0	0	0	0	0	15.42	15.42
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	662.97	3.25	0	67.43	0	0.6	0	0	5.61	0	0	0	0	0	0	15.42	15.42
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	766.39	3.25	0	68.69	0	0.63	0	0	5.85	0	0	0	0	0	0	13.89	13.89
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	572.06	3.5	0	66.15	0	-0.4	0	0	1.6	0	0	0	0	0	0	18.53	18.53
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	665.47	3.25	0	67.46	0	-1.69	0	0	0.48	0	0	0	0	0	0	19.49	19.49
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	767.59	3.25	0	68.7	0	-1.77	0	0	0.54	0	0	0	0	0	0	18.27	18.27
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	824.3	3.25	0	69.32	0	-1.82	0	0	0.58	0	0	0	0	0	0	17.66	17.66
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	980.3	3.25	0	70.83	0	-1.92	0	0	0.67	0	0	0	0	0	0	16.17	16.17
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1072.4	3.25	0	71.61	0	-1.98	0	0	0.72	0	0	0	0	0	0	15.39	15.39
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1020.4	3.25	0	71.18	0	-1.95	0	0	0.69	0	0	0	0	0	0	12.22	12.22
/alue D/N:	0	0																									
Level D/N:	28.6908	28.6908																									

Receiver: Existing Potential Noise Receptor
ID: R19
X: 345672
Y: 4895914
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	904.71	3.25	0	70.13	0	-0.29	0	0	10.58	0	0	0	0	0	0	19.89	19.89
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1062.5	3.25	0	71.53	0	-0.22	0	0	11.11	0	0	0	0	0	0	17.89	17.89
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1149.1	3.25	0	72.21	0	-0.18	0	0	11.38	0	0	0	0	0	0	16.9	16.9
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1100.9	3.25	0	71.83	0	-0.2	0	0	11.23	0	0	0	0	0	0	14.44	14.44
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	742.58	3.25	0	68.41	0	0.62	0	0	5.8	0	0	0	0	0	0	14.22	14.22
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	836.86	3.25	0	69.45	0	0.65	0	0	6	0	0	0	0	0	0	12.96	12.96
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	658.51	3.5	0	67.37	0	-0.4	0	0	1.79	0	0	0	0	0	0	17.12	17.12
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	745.3	3.25	0	68.45	0	-1.76	0	0	0.53	0	0	0	0	0	0	18.53	18.53
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	838.29	3.25	0	69.47	0	-1.83	0	0	0.58	0	0	0	0	0	0	17.52	17.52
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	907.92	3.25	0	70.16	0	-1.87	0	0	0.62	0	0	0	0	0	0	16.83	16.83
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1065.3	3.25	0	71.55	0	-1.97	0	0	0.72	0	0	0	0	0	0	15.45	15.45
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1151.7	3.25	0	72.23	0	-2.02	0	0	0.77	0	0	0	0	0	0	14.77	14.77
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1103.4	3.25	0	71.85	0	-2	0	0	0.74	0	0	0	0	0	0	11.54	11.54
/alue D/N:	0	0																									
Level D/N:	27.6995	27.6995																									

Receiver: Existing Potential Noise Receptor
ID: R20
X: 345658
Y: 4895863
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	953.14	3.25	0	70.58	0	-0.27	0	0	10.75	0	0	0	0	0	0	19.25	19.25
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1109.5	3.25	0	71.9	0	-0.19	0	0	11.26	0	0	0	0	0	0	17.35	17.35
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1200	3.25	0	72.58	0	-0.15	0	0	11.53	0	0	0	0	0	0	16.36	16.36
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1149.8	3.25	0	72.21	0	-0.18	0	0	11.38	0	0	0	0	0	0	13.9	13.9
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	793.23	3.25	0	68.99	0	0.64	0	0	5.91	0	0	0	0	0	0	13.53	13.53
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	889.52	3.25	0	69.98	0	0.66	0	0	6.1	0	0	0	0	0	0	12.31	12.31
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	702.76	3.5	0	67.94	0	-0.4	0	0	1.89	0	0	0	0	0	0	16.45	16.45

Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	795.85	3.25	0	69.02	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.96	17.96
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	890.93	3.25	0	70	0	-1.86	0	0	0.61	0	0	0	0	0	0	16.99	16.99
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	956.26	3.25	0	70.61	0	-1.91	0	0	0.65	0	0	0	0	0	0	16.38	16.38
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1112.2	3.25	0	71.92	0	-2	0	0	0.74	0	0	0	0	0	0	15.08	15.08
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1202.6	3.25	0	72.6	0	-2.05	0	0	0.79	0	0	0	0	0	0	14.4	14.4
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1152.2	3.25	0	72.23	0	-2.02	0	0	0.77	0	0	0	0	0	0	11.17	11.17
/alue D/N: 0	0																								
Level D/N: 27.1486	27.1486																								

Receiver: Existing Potential Noise Receptor
ID: R21
X: 346106
Y: 4897968
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1086.8	3.25	0	71.72	0	-0.2	0	0	11.19	0	0	0	0	0	0	17.61	17.61
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1314.5	3.25	0	73.38	0	-0.11	0	0	11.84	0	0	0	0	0	0	15.2	15.2
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1365.6	3.25	0	73.71	0	-0.09	0	0	11.98	0	0	0	0	0	0	14.71	14.71
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1214.4	3.25	0	72.69	0	-0.15	0	0	11.57	0	0	0	0	0	0	13.21	13.21
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1279.3	3.25	0	73.14	0	0.74	0	0	6.82	0	0	0	0	0	0	8.35	8.35
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1429.4	3.25	0	74.1	0	0.78	0	0	7.09	0	0	0	0	0	0	7.09	7.09
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1087.5	3.25	0	71.73	0	-1.99	0	0	0.73	0	0	0	0	0	0	15.27	15.27
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1278.8	3.25	0	73.14	0	-2.09	0	0	0.84	0	0	0	0	0	0	13.86	13.86
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1315.4	3.25	0	73.38	0	-2.11	0	0	0.86	0	0	0	0	0	0	13.62	13.62
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1366.2	3.25	0	73.71	0	-2.14	0	0	0.88	0	0	0	0	0	0	13.29	13.29
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1429.3	3.25	0	74.1	0	-2.17	0	0	0.92	0	0	0	0	0	0	12.89	12.89
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1630.5	3.5	0	75.25	0	-0.25	0	0	3.72	0	0	0	0	0	0	7.16	7.16
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1215.2	3.25	0	72.69	0	-2.06	0	0	0.8	0	0	0	0	0	0	10.71	10.71
/alue D/N: 0	0																										
Level D/N: 24.6524	24.6524																										

Receiver: Vacant Lot Receptor
ID: VL1
X: 346204
Y: 4896241
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	371.86	3.25	0	62.41	0	-0.63	0	0	7.31	0	0	0	0	0	0	31.22	31.22
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	487.58	3.25	0	64.76	0	-0.56	0	0	8.43	0	0	0	0	0	0	27.68	27.68
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	102.22	3.5	0	51.19	0	-0.14	0	0	0.37	0	0	0	0	0	0	34.46	34.46
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	656.54	3.25	0	67.35	0	-0.44	0	0	9.52	0	0	0	0	0	0	23.89	23.89
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	558.26	3.25	0	65.94	0	-0.51	0	0	8.94	0	0	0	0	0	0	22.94	22.94
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	325.53	3.25	0	61.25	0	0.39	0	0	4.31	0	0	0	0	0	0	23.11	23.11
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	323.55	3.25	0	61.2	0	-1.11	0	0	0.25	0	0	0	0	0	0	25.4	25.4
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	511.65	3.25	0	65.18	0	0.53	0	0	5.18	0	0	0	0	0	0	18.16	18.16
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	372.52	3.25	0	62.42	0	-1.26	0	0	0.29	0	0	0	0	0	0	24.3	24.3
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	489.21	3.25	0	64.79	0	-1.49	0	0	0.36	0	0	0	0	0	0	22.08	22.08
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	509.83	3.25	0	65.15	0	-1.52	0	0	0.38	0	0	0	0	0	0	21.74	21.74
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	657.07	3.25	0	67.35	0	-1.68	0	0	0.47	0	0	0	0	0	0	19.6	19.6
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	559.34	3.25	0	65.95	0	-1.59	0	0	0.41	0	0	0	0	0	0	17.36	17.36
/alue D/N: 0	0																										
Level D/N: 38.123	38.123																										

Receiver: Vacant Lot Receptor
ID: VL2

X: 346718
Y: 4896591
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	331.23	3.25	0	61.4	0	-0.65	0	0	6.82	0	0	0	0	0	0	32.74	32.74
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	468.39	3.25	0	64.41	0	-0.57	0	0	8.27	0	0	0	0	0	0	28.21	28.21
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	539.2	3.25	0	65.63	0	-0.52	0	0	8.81	0	0	0	0	0	0	26.39	26.39
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	410.58	3.25	0	63.27	0	-0.61	0	0	7.73	0	0	0	0	0	0	26.93	26.93
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	327.4	3.25	0	61.3	0	-1.12	0	0	0.25	0	0	0	0	0	0	25.31	25.31
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	647.1	3.25	0	67.22	0	0.59	0	0	5.57	0	0	0	0	0	0	15.67	15.67
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	463.4	3.25	0	64.32	0	-1.45	0	0	0.35	0	0	0	0	0	0	22.53	22.53
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	755.34	3.25	0	68.56	0	0.63	0	0	5.83	0	0	0	0	0	0	14.04	14.04
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	535.07	3.25	0	65.57	0	-1.56	0	0	0.39	0	0	0	0	0	0	21.34	21.34
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	598.63	3.5	0	66.54	0	-0.4	0	0	1.66	0	0	0	0	0	0	18.08	18.08
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	407.03	3.25	0	63.19	0	-1.35	0	0	0.31	0	0	0	0	0	0	19.99	19.99
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	642.11	3.25	0	67.15	0	-1.67	0	0	0.46	0	0	0	0	0	0	19.8	19.8
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	751.38	3.25	0	68.52	0	-1.76	0	0	0.53	0	0	0	0	0	0	18.46	18.46
/alue D/N:	0	0																									
Level D/N:	36.5459	36.5459																									

Receiver: Vacant Lot Receptor
ID: VL3
X: 345902
Y: 4896951
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	374.37	3.25	0	62.47	0	-0.63	0	0	7.34	0	0	0	0	0	0	31.14	31.14
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	487.23	3.25	0	64.75	0	-0.56	0	0	8.42	0	0	0	0	0	0	27.69	27.69
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	564.54	3.25	0	66.03	0	-0.5	0	0	8.98	0	0	0	0	0	0	25.8	25.8
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	482.69	3.25	0	64.67	0	-0.56	0	0	8.39	0	0	0	0	0	0	24.81	24.81
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	263.92	3.25	0	59.43	0	0.35	0	0	3.85	0	0	0	0	0	0	25.44	25.44
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	264.98	3.25	0	59.46	0	-0.85	0	0	0.21	0	0	0	0	0	0	26.92	26.92
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	446.08	3.25	0	63.99	0	0.49	0	0	4.94	0	0	0	0	0	0	19.64	19.64
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	379.32	3.25	0	62.58	0	-1.28	0	0	0.29	0	0	0	0	0	0	24.15	24.15
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	448.02	3.25	0	64.03	0	-1.43	0	0	0.34	0	0	0	0	0	0	22.81	22.81
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	490.81	3.25	0	64.82	0	-1.5	0	0	0.37	0	0	0	0	0	0	22.05	22.05
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	568.08	3.25	0	66.09	0	-1.6	0	0	0.42	0	0	0	0	0	0	20.83	20.83
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	670.13	3.5	0	67.52	0	-0.4	0	0	1.82	0	0	0	0	0	0	16.94	16.94
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	486.43	3.25	0	64.74	0	-1.49	0	0	0.36	0	0	0	0	0	0	18.53	18.53
/alue D/N:	0	0																									
Level D/N:	36.3917	36.3917																									

Receiver: Vacant Lot Receptor
ID: VL4
X: 345893
Y: 4897316
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	567.21	3.25	0	66.07	0	-0.5	0	0	9	0	0	0	0	0	0	25.74	25.74
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	791.13	3.25	0	68.96	0	-0.36	0	0	10.14	0	0	0	0	0	0	21.56	21.56
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	808.52	3.25	0	69.15	0	-0.35	0	0	10.22	0	0	0	0	0	0	21.29	21.29
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	707.09	3.25	0	67.99	0	-0.41	0	0	9.77	0	0	0	0	0	0	19.96	19.96
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	624.77	3.25	0	66.91	0	0.59	0	0	5.52	0	0	0	0	0	0	16.04	16.04

	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	797.58	3.25	0	69.04	0	0.64	0	0	5.92	0	0	0	0	0	0	13.47	13.47
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	570.57	3.25	0	66.13	0	-1.6	0	0	0.42	0	0	0	0	0	0	20.8	20.8
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	625.27	3.25	0	66.92	0	-1.65	0	0	0.45	0	0	0	0	0	0	20.02	20.02
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	793.4	3.25	0	68.99	0	-1.79	0	0	0.56	0	0	0	0	0	0	17.99	17.99
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	798.72	3.25	0	69.05	0	-1.8	0	0	0.56	0	0	0	0	0	0	17.93	17.93
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	811.04	3.25	0	69.18	0	-1.81	0	0	0.57	0	0	0	0	0	0	17.8	17.8
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1016.9	3.5	0	71.15	0	-0.37	0	0	2.55	0	0	0	0	0	0	12.54	12.54
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	709.7	3.25	0	68.02	0	-1.73	0	0	0.51	0	0	0	0	0	0	15.34	15.34
/alue D/N:	0	0																								
Level D/N:	31.0456	31.0456																								

Receiver: Vacant Lot Receptor
ID: VL5
X: 345943
Y: 4897382
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	588.55	3.25	0	66.4	0	-0.49	0	0	9.13	0	0	0	0	0	0	25.27	25.27
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	830.81	3.25	0	69.39	0	-0.33	0	0	10.3	0	0	0	0	0	0	20.95	20.95
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	832.34	3.25	0	69.41	0	-0.33	0	0	10.31	0	0	0	0	0	0	20.93	20.93
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	729.19	3.25	0	68.26	0	-0.39	0	0	9.87	0	0	0	0	0	0	19.57	19.57
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	686.54	3.25	0	67.73	0	0.61	0	0	5.67	0	0	0	0	0	0	15.05	15.05
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	852.97	3.25	0	69.62	0	0.65	0	0	6.03	0	0	0	0	0	0	12.76	12.76
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	591.36	3.25	0	66.44	0	-1.62	0	0	0.43	0	0	0	0	0	0	20.49	20.49
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	686.7	3.25	0	67.74	0	-1.71	0	0	0.49	0	0	0	0	0	0	19.23	19.23
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	832.67	3.25	0	69.41	0	-1.82	0	0	0.58	0	0	0	0	0	0	17.57	17.57
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	834.55	3.25	0	69.43	0	-1.82	0	0	0.58	0	0	0	0	0	0	17.55	17.55
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	853.74	3.25	0	69.63	0	-1.84	0	0	0.59	0	0	0	0	0	0	17.36	17.36
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1068.5	3.5	0	71.58	0	-0.36	0	0	2.66	0	0	0	0	0	0	12	12
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	731.44	3.25	0	68.28	0	-1.75	0	0	0.52	0	0	0	0	0	0	15.09	15.09
/alue D/N:	0	0																								
Level D/N:	30.5639	30.5639																								

Receiver: Vacant Lot Receptor
ID: VL6
X: 345992
Y: 4897622
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	779.99	3.25	0	68.84	0	-0.36	0	0	10.1	0	0	0	0	0	0	21.74	21.74
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1020.6	3.25	0	71.18	0	-0.24	0	0	10.98	0	0	0	0	0	0	18.39	18.39
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1044.4	3.25	0	71.38	0	-0.22	0	0	11.06	0	0	0	0	0	0	18.1	18.1
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	917.05	3.25	0	70.25	0	-0.29	0	0	10.63	0	0	0	0	0	0	16.73	16.73
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	926.26	3.25	0	70.33	0	0.67	0	0	6.17	0	0	0	0	0	0	11.88	11.88
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1086	3.25	0	71.72	0	0.7	0	0	6.48	0	0	0	0	0	0	10.16	10.16
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	781.8	3.25	0	68.86	0	-1.78	0	0	0.55	0	0	0	0	0	0	18.12	18.12
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	926.18	3.25	0	70.33	0	-1.89	0	0	0.64	0	0	0	0	0	0	16.66	16.66
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1022.2	3.25	0	71.19	0	-1.95	0	0	0.69	0	0	0	0	0	0	15.81	15.81
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1045.6	3.25	0	71.39	0	-1.96	0	0	0.71	0	0	0	0	0	0	15.61	15.61
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1086.4	3.25	0	71.72	0	-1.99	0	0	0.73	0	0	0	0	0	0	15.28	15.28
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1296	3.5	0	73.25	0	-0.32	0	0	3.1	0	0	0	0	0	0	9.84	9.84
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	918.63	3.25	0	70.26	0	-1.88	0	0	0.63	0	0	0	0	0	0	13.13	13.13
/alue D/N:	0	0																								
Level D/N:	27.8189	27.8189																								

Receiver: Vacant Lot Receptor
ID: VL7
X: 346078
Y: 4897685
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	814.45	3.25	0	69.22	0	-0.34	0	0	10.24	0	0	0	0	0	0	21.2	21.2
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1049	3.25	0	71.42	0	-0.22	0	0	11.07	0	0	0	0	0	0	18.05	18.05
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1088.7	3.25	0	71.74	0	-0.2	0	0	11.19	0	0	0	0	0	0	17.58	17.58
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	946.82	3.25	0	70.53	0	-0.27	0	0	10.73	0	0	0	0	0	0	16.33	16.33
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	994.88	3.25	0	70.96	0	0.68	0	0	6.31	0	0	0	0	0	0	11.11	11.11
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1146	3.25	0	72.18	0	0.72	0	0	6.58	0	0	0	0	0	0	9.57	9.57
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	815.65	3.25	0	69.23	0	-1.81	0	0	0.57	0	0	0	0	0	0	17.75	17.75
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	994.46	3.25	0	70.95	0	-1.93	0	0	0.68	0	0	0	0	0	0	16.04	16.04
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1050.2	3.25	0	71.43	0	-1.96	0	0	0.71	0	0	0	0	0	0	15.57	15.57
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1089.5	3.25	0	71.74	0	-1.99	0	0	0.73	0	0	0	0	0	0	15.25	15.25
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1146	3.25	0	72.18	0	-2.02	0	0	0.76	0	0	0	0	0	0	14.82	14.82
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1349.5	3.5	0	73.6	0	-0.31	0	0	3.2	0	0	0	0	0	0	9.38	9.38
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	947.99	3.25	0	70.54	0	-1.9	0	0	0.65	0	0	0	0	0	0	12.86	12.86
/alue D/N:	0	0																									
Level D/N:	27.3684	27.3684																									

Receiver: Vacant Lot Receptor
ID: VL8
X: 347161
Y: 4896607
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	764.2	3.25	0	68.66	0	-0.37	0	0	10.03	0	0	0	0	0	0	21.99	21.99
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	911.01	3.25	0	70.19	0	-0.29	0	0	10.6	0	0	0	0	0	0	19.81	19.81
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	934.18	3.25	0	70.41	0	-0.28	0	0	10.69	0	0	0	0	0	0	19.5	19.5
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	826.11	3.25	0	69.34	0	-0.34	0	0	10.29	0	0	0	0	0	0	18.02	18.02
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1090.1	3.25	0	71.75	0	0.7	0	0	6.48	0	0	0	0	0	0	10.12	10.12
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	760.23	3.25	0	68.62	0	-1.77	0	0	0.54	0	0	0	0	0	0	18.36	18.36
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1194.3	3.25	0	72.54	0	0.73	0	0	6.67	0	0	0	0	0	0	9.12	9.12
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	906.01	3.25	0	70.14	0	-1.87	0	0	0.62	0	0	0	0	0	0	16.85	16.85
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	929.43	3.25	0	70.36	0	-1.89	0	0	0.64	0	0	0	0	0	0	16.63	16.63
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1021.8	3.5	0	71.19	0	-0.37	0	0	2.56	0	0	0	0	0	0	12.49	12.49
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1085.1	3.25	0	71.71	0	-1.98	0	0	0.73	0	0	0	0	0	0	15.29	15.29
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1190.3	3.25	0	72.51	0	-2.05	0	0	0.79	0	0	0	0	0	0	14.49	14.49
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	822.2	3.25	0	69.3	0	-1.81	0	0	0.57	0	0	0	0	0	0	14.08	14.08
/alue D/N:	0	0																									
Level D/N:	28.4061	28.4061																									

Receiver: Vacant Lot Receptor
ID: VL9
X: 347374
Y: 4896724
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	973.71	3.25	0	70.77	0	-0.26	0	0	10.82	0	0	0	0	0	0	18.98	18.98
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1115	3.25	0	71.95	0	-0.19	0	0	11.27	0	0	0	0	0	0	17.28	17.28
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1129.8	3.25	0	72.06	0	-0.19	0	0	11.32	0	0	0	0	0	0	17.12	17.12

	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1022.5	3.25	0	71.19	0	-0.24	0	0	10.98	0	0	0	0	0	0	15.37	15.37
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1314.1	3.25	0	73.37	0	0.75	0	0	6.89	0	0	0	0	0	0	8.05	8.05
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1404.3	3.25	0	73.95	0	0.77	0	0	7.04	0	0	0	0	0	0	7.29	7.29
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	969.71	3.25	0	70.73	0	-1.91	0	0	0.66	0	0	0	0	0	0	16.26	16.26
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1110.1	3.25	0	71.91	0	-2	0	0	0.74	0	0	0	0	0	0	15.09	15.09
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1124.8	3.25	0	72.02	0	-2.01	0	0	0.75	0	0	0	0	0	0	14.98	14.98
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1259.3	3.5	0	73	0	-0.33	0	0	3.03	0	0	0	0	0	0	10.17	10.17
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1309.1	3.25	0	73.34	0	-2.11	0	0	0.85	0	0	0	0	0	0	13.66	13.66
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1400.3	3.25	0	73.92	0	-2.15	0	0	0.9	0	0	0	0	0	0	13.07	13.07
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1018.5	3.25	0	71.16	0	-1.94	0	0	0.69	0	0	0	0	0	0	12.24	12.24
/alue D/N:	0	0																									
Level D/N:	26.095	26.095																									

Receiver: Vacant Lot Receptor
ID: VL10
X: 347531
Y: 4896828
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1138.8	3.25	0	72.13	0	-0.18	0	0	11.35	0	0	0	0	0	0	17.02	17.02
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1260.7	3.25	0	73.01	0	-0.13	0	0	11.7	0	0	0	0	0	0	15.73	15.73
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1299.4	3.25	0	73.27	0	-0.11	0	0	11.8	0	0	0	0	0	0	15.35	15.35
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1179	3.25	0	72.43	0	-0.16	0	0	11.46	0	0	0	0	0	0	13.58	13.58
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1486.4	3.25	0	74.44	0	0.79	0	0	7.18	0	0	0	0	0	0	6.64	6.64
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1566.6	3.25	0	74.9	0	0.81	0	0	7.32	0	0	0	0	0	0	6.03	6.03
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1134.8	3.25	0	72.1	0	-2.01	0	0	0.76	0	0	0	0	0	0	14.9	14.9
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1255.7	3.25	0	72.98	0	-2.08	0	0	0.82	0	0	0	0	0	0	14.02	14.02
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1294.5	3.25	0	73.24	0	-2.1	0	0	0.84	0	0	0	0	0	0	13.76	13.76
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1441.5	3.5	0	74.18	0	-0.29	0	0	3.38	0	0	0	0	0	0	8.61	8.61
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1481.5	3.25	0	74.41	0	-2.19	0	0	0.94	0	0	0	0	0	0	12.58	12.58
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1562.6	3.25	0	74.88	0	-2.23	0	0	0.99	0	0	0	0	0	0	12.11	12.11
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1175	3.25	0	72.4	0	-2.04	0	0	0.78	0	0	0	0	0	0	11	11
/alue D/N:	0	0																									
Level D/N:	24.5867	24.5867																									

Receiver: Vacant Lot Receptor
ID: VL11
X: 345425
Y: 4895823
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1140.2	3.25	0	72.14	0	-0.18	0	0	11.35	0	0	0	0	0	0	17	17
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1303.5	3.25	0	73.3	0	-0.11	0	0	11.81	0	0	0	0	0	0	15.31	15.31
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1365.5	3.25	0	73.71	0	-0.09	0	0	11.98	0	0	0	0	0	0	14.71	14.71
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1332.3	3.25	0	73.49	0	-0.1	0	0	11.89	0	0	0	0	0	0	12.03	12.03
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	965.69	3.25	0	70.7	0	0.68	0	0	6.25	0	0	0	0	0	0	11.43	11.43
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1029.2	3.25	0	71.25	0	0.69	0	0	6.37	0	0	0	0	0	0	10.75	10.75
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	910.36	3.5	0	70.18	0	-0.38	0	0	2.34	0	0	0	0	0	0	13.74	13.74
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	969.06	3.25	0	70.73	0	-1.91	0	0	0.66	0	0	0	0	0	0	16.27	16.27
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1031.3	3.25	0	71.27	0	-1.95	0	0	0.7	0	0	0	0	0	0	15.73	15.73
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1143.8	3.25	0	72.17	0	-2.02	0	0	0.76	0	0	0	0	0	0	14.83	14.83
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1306.5	3.25	0	73.32	0	-2.11	0	0	0.85	0	0	0	0	0	0	13.68	13.68
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1368.6	3.25	0	73.73	0	-2.14	0	0	0.88	0	0	0	0	0	0	13.27	13.27
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1335.1	3.25	0	73.51	0	-2.12	0	0	0.87	0	0	0	0	0	0	9.89	9.89
/alue D/N:	0	0																									

Level D/N: 25.3595 25.3595

Receiver: Vacant Lot Receptor
ID: VL12
X: 345409
Y: 4895655
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1272.5	3.25	0	73.09	0	-0.12	0	0	11.73	0	0	0	0	0	0	15.61	15.61
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1431.5	3.25	0	74.12	0	-0.06	0	0	12.15	0	0	0	0	0	0	14.1	14.1
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1509.9	3.25	0	74.58	0	-0.03	0	0	12.35	0	0	0	0	0	0	13.41	13.41
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1467.8	3.25	0	74.33	0	-0.05	0	0	12.24	0	0	0	0	0	0	10.78	10.78
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1105.6	3.25	0	71.87	0	0.71	0	0	6.51	0	0	0	0	0	0	9.97	9.97
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1182.5	3.25	0	72.46	0	0.72	0	0	6.65	0	0	0	0	0	0	9.23	9.23
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1026.9	3.5	0	71.23	0	-0.37	0	0	2.57	0	0	0	0	0	0	12.44	12.44
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1108.6	3.25	0	71.9	0	-2	0	0	0.74	0	0	0	0	0	0	15.1	15.1
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1184.5	3.25	0	72.47	0	-2.04	0	0	0.78	0	0	0	0	0	0	14.53	14.53
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1275.8	3.25	0	73.12	0	-2.09	0	0	0.83	0	0	0	0	0	0	13.88	13.88
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1434.2	3.25	0	74.13	0	-2.17	0	0	0.92	0	0	0	0	0	0	12.86	12.86
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1512.8	3.25	0	74.6	0	-2.21	0	0	0.96	0	0	0	0	0	0	12.39	12.39
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1470.4	3.25	0	74.35	0	-2.19	0	0	0.94	0	0	0	0	0	0	9.04	9.04

/alue D/N: 0 0
Level D/N: 24.1794 24.1794

Receiver: Vacant Lot Receptor
ID: VL13
X: 345560
Y: 4895810
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1056.5	3.25	0	71.48	0	-0.22	0	0	11.09	0	0	0	0	0	0	17.96	17.96
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1215.1	3.25	0	72.69	0	-0.15	0	0	11.57	0	0	0	0	0	0	16.2	16.2
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	1296.9	3.25	0	73.26	0	-0.11	0	0	11.8	0	0	0	0	0	0	15.37	15.37
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1252.1	3.25	0	72.95	0	-0.13	0	0	11.67	0	0	0	0	0	0	12.82	12.82
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	891.41	3.25	0	70	0	0.66	0	0	6.11	0	0	0	0	0	0	12.29	12.29
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	976.27	3.25	0	70.79	0	0.68	0	0	6.27	0	0	0	0	0	0	11.32	11.32
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	811.22	3.5	0	69.18	0	-0.4	0	0	2.13	0	0	0	0	0	0	14.96	14.96
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	894.3	3.25	0	70.03	0	-1.86	0	0	0.62	0	0	0	0	0	0	16.96	16.96
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	977.96	3.25	0	70.81	0	-1.92	0	0	0.67	0	0	0	0	0	0	16.19	16.19
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1059.7	3.25	0	71.5	0	-1.97	0	0	0.71	0	0	0	0	0	0	15.49	15.49
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1217.9	3.25	0	72.71	0	-2.06	0	0	0.8	0	0	0	0	0	0	14.29	14.29
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	1299.7	3.25	0	73.28	0	-2.1	0	0	0.85	0	0	0	0	0	0	13.72	13.72
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1254.7	3.25	0	72.97	0	-2.08	0	0	0.82	0	0	0	0	0	0	10.43	10.43

/alue D/N: 0 0
Level D/N: 26.1033 26.1033

Receiver: Vacant Lot Receptor
ID: VL14
X: 346091
Y: 4897861
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	983.8	3.25	0	70.86	0	-0.25	0	0	10.86	0	0	0	0	0	0	18.85	18.85

	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	1214.2	3.25	0	72.69	0	-0.15	0	0	11.57	0	0	0	0	0	0	16.21	16.21
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	1261.1	3.25	0	73.01	0	-0.13	0	0	11.7	0	0	0	0	0	0	15.73	15.73
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	1113.3	3.25	0	71.93	0	-0.19	0	0	11.27	0	0	0	0	0	0	14.3	14.3
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	1171.3	3.25	0	72.37	0	0.72	0	0	6.63	0	0	0	0	0	0	9.33	9.33
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1322.1	3.25	0	73.43	0	0.75	0	0	6.9	0	0	0	0	0	0	7.98	7.98
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	984.73	3.25	0	70.87	0	-1.92	0	0	0.67	0	0	0	0	0	0	16.13	16.13
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	1170.9	3.25	0	72.37	0	-2.03	0	0	0.78	0	0	0	0	0	0	14.63	14.63
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	1215.3	3.25	0	72.69	0	-2.06	0	0	0.8	0	0	0	0	0	0	14.31	14.31
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	1261.7	3.25	0	73.02	0	-2.08	0	0	0.83	0	0	0	0	0	0	13.98	13.98
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1322.1	3.25	0	73.43	0	-2.12	0	0	0.86	0	0	0	0	0	0	13.57	13.57
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1524.3	3.5	0	74.66	0	-0.27	0	0	3.53	0	0	0	0	0	0	7.96	7.96
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	1114.2	3.25	0	71.94	0	-2	0	0	0.74	0	0	0	0	0	0	11.46	11.46
/alue D/N:	0	0																									
Level D/N:	25.5956	25.5956																									

Receiver: Vacant Lot Receptor
ID: VL15
X: 346051
Y: 4897575
Z: 4.5
Ground: 0

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 1	INV1	346272	4896894	2	0	0	100.3	100.3	1	715.97	3.25	0	68.1	0	-0.4	0	0	9.81	0	0	0	0	0	0	22.8	22.8
	Inverter 3	INV3	346401	4896687	2	0	0	100.3	100.3	1	954.49	3.25	0	70.6	0	-0.27	0	0	10.76	0	0	0	0	0	0	19.23	19.23
	Inverter 4	INV4	346250	4896610	2	0	0	100.3	100.3	1	985.31	3.25	0	70.87	0	-0.25	0	0	10.86	0	0	0	0	0	0	18.83	18.83
	Inverter 2	INV2	346353	4896779	2	0	0	97.3	97.3	1	851.37	3.25	0	69.6	0	-0.32	0	0	10.38	0	0	0	0	0	0	17.65	17.65
	Inverter 5	INV5	345970	4896696	2	0	0	89.1	89.1	1	882.73	3.25	0	69.92	0	0.66	0	0	6.09	0	0	0	0	0	0	12.39	12.39
	Inverter 6	INV6	346073	4896539	2	0	0	89.1	89.1	1	1036.2	3.25	0	71.31	0	0.69	0	0	6.38	0	0	0	0	0	0	10.67	10.67
	Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	85.7	85.7	1	717.53	3.25	0	68.12	0	-1.74	0	0	0.51	0	0	0	0	0	0	18.85	18.85
	Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	85.7	85.7	1	882.37	3.25	0	69.91	0	-1.86	0	0	0.61	0	0	0	0	0	0	17.07	17.07
	Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	85.7	85.7	1	955.96	3.25	0	70.61	0	-1.9	0	0	0.65	0	0	0	0	0	0	16.38	16.38
	Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	85.7	85.7	1	986.33	3.25	0	70.88	0	-1.92	0	0	0.67	0	0	0	0	0	0	16.11	16.11
	Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	85.7	85.7	1	1036.4	3.25	0	71.31	0	-1.96	0	0	0.7	0	0	0	0	0	0	15.69	15.69
	Substation Transformer	TRS	346175	4896339	2.5	0	0	85.9	85.9	1	1242.2	3.5	0	72.88	0	-0.33	0	0	3	0	0	0	0	0	0	10.32	10.32
	Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	82.1	82.1	1	852.79	3.25	0	69.62	0	-1.84	0	0	0.59	0	0	0	0	0	0	13.77	13.77
/alue D/N:	0	0																									
Level D/N:	28.5837	28.5837																									

Receiver: Vacant Lot Receptor
ID: VL1
X: 346204
Y: 4896241
Z: 4.5
Ground: 0

Octave Spectrum CADNA Output for the Most Impacted Receptor: VL1

ISO	Description	ID	X	Y	Z	Ground	ReflOrd	LxT	LxN	L/A	Dist.	hm	Freq	Adiv	K0b	Agr	Abar	z	Aatm	Afol	Ahous	Cmet	CmetN	Dc	RL	LtotT	LtotN
	Inverter 4	INV4	346250	4896610	2	0	0	59.8	59.8	1	371.9	3.25	32	62.41	0	-4.43	0	0	0.01	0	0	0	0	0	0	1.81	1.81
	Inverter 4	INV4	346250	4896610	2	0	0	65.9	65.9	1	371.9	3.25	63	62.41	0	-4.43	0	0	0.05	0	0	0	0	0	0	7.87	7.87
	Inverter 4	INV4	346250	4896610	2	0	0	73.6	73.6	1	371.9	3.25	125	62.41	0	2.52	0	0	0.15	0	0	0	0	0	0	8.52	8.52
	Inverter 4	INV4	346250	4896610	2	0	0	82.6	82.6	1	371.9	3.25	250	62.41	0	3.84	0	0	0.39	0	0	0	0	0	0	15.96	15.96
	Inverter 4	INV4	346250	4896610	2	0	0	88.1	88.1	1	371.9	3.25	500	62.41	0	0.23	0	0	0.72	0	0	0	0	0	0	24.75	24.75
	Inverter 4	INV4	346250	4896610	2	0	0	85.7	85.7	1	371.9	3.25	1000	62.41	0	-1.23	0	0	1.36	0	0	0	0	0	0	23.16	23.16
	Inverter 4	INV4	346250	4896610	2	0	0	90.6	90.6	1	371.9	3.25	2000	62.41	0	-1.33	0	0	3.59	0	0	0	0	0	0	25.93	25.93
	Inverter 4	INV4	346250	4896610	2	0	0	99	99	1	371.9	3.25	4000	62.41	0	-1.33	0	0	12.19	0	0	0	0	0	0	25.73	25.73
	Inverter 4	INV4	346250	4896610	2	0	0	86.3	86.3	1	371.9	3.25	8000	62.41	0	-1.33	0	0	43.46	0	0	0	0	0	0	-18.24	-18.24
	Inverter 3	INV3	346401	4896687	2	0	0	59.8	59.8	1	487.6	3.25	32	64.76	0	-4.8	0	0	0.02	0	0	0	0	0	0	-0.18	-0.18
	Inverter 3	INV3	346401	4896687	2	0	0	65.9	65.9	1	487.6	3.25	63	64.76	0	-4.8	0	0	0.06	0	0	0	0	0	0	5.88	5.88
	Inverter 3	INV3	346401	4896687	2	0	0	73.6	73.6	1	487.6	3.25	125	64.76	0	2.98	0	0	0.2	0	0	0	0	0	0	5.66	5.66
	Inverter 3	INV3	346401	4896687	2	0	0	82.6	82.6	1	487.6	3.25	250	64.76	0	3.73	0	0	0.51	0	0	0	0	0	0	13.6	13.6
	Inverter 3	INV3	346401	4896687	2	0	0	88.1	88.1	1	487.6	3.25	500	64.76	0	0.12	0	0	0.94	0	0	0	0	0	0	22.28	22.28
	Inverter 3	INV3	346401	4896687	2	0	0	85.7	85.7	1	487.6	3.25	1000	64.76	0	-1.34	0	0	1.78	0	0	0	0	0	0	20.5	20.5
	Inverter 3	INV3	346401	4896687	2	0	0	90.6	90.6	1	487.6	3.25	2000	64.76	0	-1.44	0	0	4.71	0	0	0	0	0	0	22.57	22.57
	Inverter 3	INV3	346401	4896687	2	0	0	99	99	1	487.6	3.25	4000	64.76	0	-1.44	0	0	15.98	0	0	0	0	0	0	19.7	19.7
	Inverter 3	INV3	346401	4896687	2	0	0	86.3	86.3	1	487.6	3.25	8000	64.76	0	-1.44	0	0	56.99	0	0	0	0	0	0	-34.01	-34.01
	Substation Transformer	TRS	346175	4896339	2.5	0	0	43.1	43.1	1	102.2	3.5	32	51.19	0	-3	0	0	0	0	0	0	0	0	0	-5.09	-5.09
	Substation Transformer	TRS	346175	4896339	2.5	0	0	62.3	62.3	1	102.2	3.5	63	51.19	0	-3	0	0	0.01	0	0	0	0	0	0	14.1	14.1
	Substation Transformer	TRS	346175	4896339	2.5	0	0	74.4	74.4	1	102.2	3.5	125	51.19	0	1.82	0	0	0.04	0	0	0	0	0	0	21.35	21.35
	Substation Transformer	TRS	346175	4896339	2.5	0	0	76.9	76.9	1	102.2	3.5	250	51.19	0	2.93	0	0	0.11	0	0	0	0	0	0	22.67	22.67
	Substation Transformer	TRS	346175	4896339	2.5	0	0	82.3	82.3	1	102.2	3.5	500	51.19	0	-0.42	0	0	0.2	0	0	0	0	0	0	31.33	31.33
	Substation Transformer	TRS	346175	4896339	2.5	0	0	79.5	79.5	1	102.2	3.5	1000	51.19	0	-0.89	0	0	0.37	0	0	0	0	0	0	28.82	28.82
	Substation Transformer	TRS	346175	4896339	2.5	0	0	75.7	75.7	1	102.2	3.5	2000	51.19	0	-0.9	0	0	0.99	0	0	0	0	0	0	24.42	24.42
	Substation Transformer	TRS	346175	4896339	2.5	0	0	70.5	70.5	1	102.2	3.5	4000	51.19	0	-0.9	0	0	3.35	0	0	0	0	0	0	16.86	16.86
	Substation Transformer	TRS	346175	4896339	2.5	0	0	61.4	61.4	1	102.2	3.5	8000	51.19	0	-0.9	0	0	11.95	0	0	0	0	0	0	-0.84	-0.84
	Inverter 1	INV1	346272	4896894	2	0	0	59.8	59.8	1	656.5	3.25	32	67.35	0	-5.11	0	0	0.02	0	0	0	0	0	0	-2.46	-2.46
	Inverter 1	INV1	346272	4896894	2	0	0	65.9	65.9	1	656.5	3.25	63	67.35	0	-5.11	0	0	0.08	0	0	0	0	0	0	3.58	3.58
	Inverter 1	INV1	346272	4896894	2	0	0	73.6	73.6	1	656.5	3.25	125	67.35	0	3.62	0	0	0.27	0	0	0	0	0	0	2.36	2.36
	Inverter 1	INV1	346272	4896894	2	0	0	82.6	82.6	1	656.5	3.25	250	67.35	0	3.64	0	0	0.69	0	0	0	0	0	0	10.93	10.93
	Inverter 1	INV1	346272	4896894	2	0	0	88.1	88.1	1	656.5	3.25	500	67.35	0	0.02	0	0	1.27	0	0	0	0	0	0	19.46	19.46
	Inverter 1	INV1	346272	4896894	2	0	0	85.7	85.7	1	656.5	3.25	1000	67.35	0	-1.44	0	0	2.4	0	0	0	0	0	0	17.39	17.39
	Inverter 1	INV1	346272	4896894	2	0	0	90.6	90.6	1	656.5	3.25	2000	67.35	0	-1.53	0	0	6.34	0	0	0	0	0	0	18.44	18.44
	Inverter 1	INV1	346272	4896894	2	0	0	99	99	1	656.5	3.25	4000	67.35	0	-1.53	0	0	21.51	0	0	0	0	0	0	11.67	11.67
	Inverter 1	INV1	346272	4896894	2	0	0	86.3	86.3	1	656.5	3.25	8000	67.35	0	-1.53	0	0	76.74	0	0	0	0	0	0	-56.25	-56.25
	Inverter 2	INV2	346353	4896779	2	0	0	56.8	56.8	1	558.3	3.25	32	65.94	0	-4.95	0	0	0.02	0	0	0	0	0	0	-4.2	-4.2
	Inverter 2	INV2	346353	4896779	2	0	0	62.9	62.9	1	558.3	3.25	63	65.94	0	-4.95	0	0	0.07	0	0	0	0	0	0	1.85	1.85
	Inverter 2	INV2	346353	4896779	2	0	0	70.6	70.6	1	558.3	3.25	125	65.94	0	3.26	0	0	0.23	0	0	0	0	0	0	1.17	1.17
	Inverter 2	INV2	346353	4896779	2	0	0	79.6	79.6	1	558.3	3.25	250	65.94	0	3.69	0	0	0.58	0	0	0	0	0	0	9.39	9.39
	Inverter 2	INV2	346353	4896779	2	0	0	85.1	85.1	1	558.3	3.25	500	65.94	0	0.07	0	0	1.08	0	0	0	0	0	0	18.02	18.02
	Inverter 2	INV2	346353	4896779	2	0	0	82.7	82.7	1	558.3	3.25	1000	65.94	0	-1.39	0	0	2.04	0	0	0	0	0	0	16.11	16.11
	Inverter 2	INV2	346353	4896779	2	0	0	87.6	87.6	1	558.3	3.25	2000	65.94	0	-1.49	0	0	5.39	0	0	0	0	0	0	17.75	17.75
	Inverter 2	INV2	346353	4896779	2	0	0	96	96	1	558.3	3.25	4000	65.94	0	-1.49	0	0	18.29	0	0	0	0	0	0	13.25	13.25
	Inverter 2	INV2	346353	4896779	2	0	0	83.3	83.3	1	558.3	3.25	8000	65.94	0	-1.49	0	0	65.25	0	0	0	0	0	0	-46.4	-46.4
	Inverter 6	INV6	346073	4896539	2	0	0	69.6	69.6	1	325.5	3.25	125	61.25	0	2.37	0	0	0.13	0	0	0	0	0	0	5.85	5.85
	Inverter 6	INV6	346073	4896539	2	0	0	78.6	78.6	1	325.5	3.25	250	61.25	0	3.9	0	0	0.34	0	0	0	0	0	0	13.1	13.1
	Inverter 6	INV6	346073	4896539	2	0	0	82.1	82.1	1	325.5	3.25	500	61.25	0	0.29	0	0	0.63	0	0	0	0	0	0	19.93	19.93
	Inverter 6	INV6	346073	4896539	2	0	0	75.7	75.7	1	325.5	3.25	1000	61.25	0	-1.17	0	0	1.19	0	0	0	0	0	0	14.42	14.42
	Inverter 6	INV6	346073	4896539	2	0	0	73.6	73.6	1	325.5	3.25	2000	61.25	0	-1.26	0	0	3.15	0	0	0	0	0	0	10.46	10.46

Inverter 6	INV6	346073	4896539	2	0	0	87	87	1	325.5	3.25	4000	61.25	0	-1.26	0	0	10.67	0	0	0	0	0	0	16.34	16.34
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	73.7	73.7	1	323.6	3.25	32	61.2	0	-4.19	0	0	0.01	0	0	0	0	0	0	16.68	16.68
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	79.7	79.7	1	323.6	3.25	63	61.2	0	-4.19	0	0	0.04	0	0	0	0	0	0	22.65	22.65
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	81.7	81.7	1	323.6	3.25	125	61.2	0	2.36	0	0	0.13	0	0	0	0	0	0	18.01	18.01
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	76.7	76.7	1	323.6	3.25	250	61.2	0	3.91	0	0	0.34	0	0	0	0	0	0	11.26	11.26
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	76.7	76.7	1	323.6	3.25	500	61.2	0	0.3	0	0	0.62	0	0	0	0	0	0	14.58	14.58
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	70.7	70.7	1	323.6	3.25	1000	61.2	0	-1.16	0	0	1.18	0	0	0	0	0	0	9.48	9.48
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	65.7	65.7	1	323.6	3.25	2000	61.2	0	-1.26	0	0	3.13	0	0	0	0	0	0	2.63	2.63
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	60.7	60.7	1	323.6	3.25	4000	61.2	0	-1.26	0	0	10.6	0	0	0	0	0	0	-9.84	-9.84
Inverter Transformer 6	INVTR6	346078	4896539	2	0	0	53.7	53.7	1	323.6	3.25	8000	61.2	0	-1.26	0	0	37.82	0	0	0	0	0	0	-44.06	-44.06
Inverter 5	INV5	345970	4896696	2	0	0	69.6	69.6	1	511.7	3.25	125	65.18	0	3.08	0	0	0.21	0	0	0	0	0	0	1.14	1.14
Inverter 5	INV5	345970	4896696	2	0	0	78.6	78.6	1	511.7	3.25	250	65.18	0	3.72	0	0	0.53	0	0	0	0	0	0	9.17	9.17
Inverter 5	INV5	345970	4896696	2	0	0	82.1	82.1	1	511.7	3.25	500	65.18	0	0.1	0	0	0.99	0	0	0	0	0	0	15.83	15.83
Inverter 5	INV5	345970	4896696	2	0	0	75.7	75.7	1	511.7	3.25	1000	65.18	0	-1.36	0	0	1.87	0	0	0	0	0	0	10.01	10.01
Inverter 5	INV5	345970	4896696	2	0	0	73.6	73.6	1	511.7	3.25	2000	65.18	0	-1.46	0	0	4.94	0	0	0	0	0	0	4.93	4.93
Inverter 5	INV5	345970	4896696	2	0	0	87	87	1	511.7	3.25	4000	65.18	0	-1.46	0	0	16.77	0	0	0	0	0	0	6.51	6.51
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	73.7	73.7	1	372.5	3.25	32	62.42	0	-4.43	0	0	0.01	0	0	0	0	0	0	15.69	15.69
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	79.7	79.7	1	372.5	3.25	63	62.42	0	-4.43	0	0	0.05	0	0	0	0	0	0	21.66	21.66
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	81.7	81.7	1	372.5	3.25	125	62.42	0	2.52	0	0	0.15	0	0	0	0	0	0	16.6	16.6
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	76.7	76.7	1	372.5	3.25	250	62.42	0	3.84	0	0	0.39	0	0	0	0	0	0	10.05	10.05
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	76.7	76.7	1	372.5	3.25	500	62.42	0	0.23	0	0	0.72	0	0	0	0	0	0	13.33	13.33
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	70.7	70.7	1	372.5	3.25	1000	62.42	0	-1.23	0	0	1.36	0	0	0	0	0	0	8.15	8.15
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	65.7	65.7	1	372.5	3.25	2000	62.42	0	-1.33	0	0	3.6	0	0	0	0	0	0	1.01	1.01
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	60.7	60.7	1	372.5	3.25	4000	62.42	0	-1.33	0	0	12.21	0	0	0	0	0	0	-12.6	-12.6
Inverter Transformer 4	INVTR4	346255	4896610	2	0	0	53.7	53.7	1	372.5	3.25	8000	62.42	0	-1.33	0	0	43.54	0	0	0	0	0	0	-50.93	-50.93
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	73.7	73.7	1	489.2	3.25	32	64.79	0	-4.8	0	0	0.02	0	0	0	0	0	0	13.7	13.7
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	79.7	79.7	1	489.2	3.25	63	64.79	0	-4.8	0	0	0.06	0	0	0	0	0	0	19.65	19.65
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	81.7	81.7	1	489.2	3.25	125	64.79	0	2.98	0	0	0.2	0	0	0	0	0	0	13.73	13.73
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	76.7	76.7	1	489.2	3.25	250	64.79	0	3.73	0	0	0.51	0	0	0	0	0	0	7.67	7.67
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	76.7	76.7	1	489.2	3.25	500	64.79	0	0.12	0	0	0.94	0	0	0	0	0	0	10.85	10.85
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	70.7	70.7	1	489.2	3.25	1000	64.79	0	-1.35	0	0	1.79	0	0	0	0	0	0	5.47	5.47
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	65.7	65.7	1	489.2	3.25	2000	64.79	0	-1.44	0	0	4.73	0	0	0	0	0	0	-2.38	-2.38
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	60.7	60.7	1	489.2	3.25	4000	64.79	0	-1.44	0	0	16.03	0	0	0	0	0	0	-18.68	-18.68
Inverter Transformer 3	INVTR3	346405	4896687	2	0	0	53.7	53.7	1	489.2	3.25	8000	64.79	0	-1.44	0	0	57.18	0	0	0	0	0	0	-66.83	-66.83
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	73.7	73.7	1	509.8	3.25	32	65.15	0	-4.85	0	0	0.02	0	0	0	0	0	0	13.39	13.39
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	79.7	79.7	1	509.8	3.25	63	65.15	0	-4.85	0	0	0.06	0	0	0	0	0	0	19.34	19.34
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	81.7	81.7	1	509.8	3.25	125	65.15	0	3.07	0	0	0.21	0	0	0	0	0	0	13.27	13.27
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	76.7	76.7	1	509.8	3.25	250	65.15	0	3.72	0	0	0.53	0	0	0	0	0	0	7.3	7.3
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	76.7	76.7	1	509.8	3.25	500	65.15	0	0.1	0	0	0.98	0	0	0	0	0	0	10.47	10.47
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	70.7	70.7	1	509.8	3.25	1000	65.15	0	-1.36	0	0	1.86	0	0	0	0	0	0	5.05	5.05
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	65.7	65.7	1	509.8	3.25	2000	65.15	0	-1.46	0	0	4.93	0	0	0	0	0	0	-2.92	-2.92
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	60.7	60.7	1	509.8	3.25	4000	65.15	0	-1.46	0	0	16.71	0	0	0	0	0	0	-19.7	-19.7
Inverter Transformer 5	INVTR5	345974	4896696	2	0	0	53.7	53.7	1	509.8	3.25	8000	65.15	0	-1.46	0	0	59.59	0	0	0	0	0	0	-69.58	-69.58
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	73.7	73.7	1	657.1	3.25	32	67.35	0	-5.11	0	0	0.02	0	0	0	0	0	0	11.44	11.44
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	79.7	79.7	1	657.1	3.25	63	67.35	0	-5.11	0	0	0.08	0	0	0	0	0	0	17.38	17.38
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	81.7	81.7	1	657.1	3.25	125	67.35	0	3.62	0	0	0.27	0	0	0	0	0	0	10.45	10.45
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	76.7	76.7	1	657.1	3.25	250	67.35	0	3.64	0	0	0.69	0	0	0	0	0	0	5.02	5.02
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	76.7	76.7	1	657.1	3.25	500	67.35	0	0.02	0	0	1.27	0	0	0	0	0	0	8.06	8.06
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	70.7	70.7	1	657.1	3.25	1000	67.35	0	-1.44	0	0	2.4	0	0	0	0	0	0	2.38	2.38
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	65.7	65.7	1	657.1	3.25	2000	67.35	0	-1.53	0	0	6.35	0	0	0	0	0	0	-6.47	-6.47
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	60.7	60.7	1	657.1	3.25	4000	67.35	0	-1.53	0	0	21.53	0	0	0	0	0	0	-26.65	-26.65
Inverter Transformer 1	INVTR1	346277	4896894	2	0	0	53.7	53.7	1	657.1	3.25	8000	67.35	0	-1.53	0	0	76.8	0	0	0	0	0	0	-88.92	-88.92
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	70.1	70.1	1	559.3	3.25	32	65.95	0	-4.95	0	0	0.02	0	0	0	0	0	0	9.08	9.08
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	76.1	76.1	1	559.3	3.25	63	65.95	0	-4.95	0	0	0.07	0	0	0	0	0	0	15.03	15.03
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	78.1	78.1	1	559.3	3.25	125	65.95	0	3.27	0	0	0.23	0	0	0	0	0	0	8.65	8.65
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	73.1	73.1	1	559.3	3.25	250	65.95	0	3.69	0	0	0.58	0	0	0	0	0	0	2.88	2.88
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	73.1	73.1	1	559.3	3.25	500	65.95	0	0.07	0	0	1.08	0	0	0	0	0	0	6	6
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	67.1	67.1	1	559.3	3.25	1000	65.95	0	-1.39	0	0	2.05	0	0	0	0	0	0	0.49	0.49

Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	62.1	62.1	1	559.3	3.25	2000	65.95	0	-1.49	0	0	5.41	0	0	0	0	0	0	-7.77	-7.77
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	57.1	57.1	1	559.3	3.25	4000	65.95	0	-1.49	0	0	18.33	0	0	0	0	0	0	-25.7	-25.7
Inverter Transformer 2	INVTR2	346357	4896779	2	0	0	50.1	50.1	1	559.3	3.25	8000	65.95	0	-1.49	0	0	65.38	0	0	0	0	0	0	-79.74	-79.74
Level D/N: 38.123	38.123																									

Appendix H

STAKEHOLDER CONSULTATION

Canadian Solar Solutions Inc.

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November 4, 2013

Re: Notice of REA Amendment for Little Creek Solar Project

As you are aware, Canadian Solar has received a Renewable Energy Approval (REA) to develop a solar photovoltaic facility which would be located on Part of Lots 14 and 15, Concessions 4 and 5 in the Town of Greater Napanee, Ontario. The renewable energy facility will be known as the Little Creek Solar Project and will have a maximum name plate capacity of approximately 8.5 megawatts (MW). Canadian Solar is seeking a minor amendment to the REA issued for the Little Creek Solar Project (REA #3068-93AP8E).

White Construction (White) has completed detailed design of the solar facility. Together, Canadian Solar and White have discovered some areas to increase technical efficiency that could only be identified during the detailed design phase of the project. As such, Canadian Solar proposes to implement some technical changes to the Renewable Energy Approval for this project. These include:

- Reduction of the nameplate capacity for the facility from 10 MW AC to 8.5 MW AC;
- Reduction of the area inside the perimeter fence;
- Revisions to inverter locations, and reduction of the number of inverters, resulting in an updated *Noise Study Report*; Minor revisions to the locations of internal access roads;
- Adjustment to the panel module mix;
- Decrease in the number of panels used; and a change in the model for the substation transformer.

The report titled *Modifications Document for the Little Creek Solar Project* further describes the amendments proposed by Canadian Solar. The report concludes that the amendments represent improvements for neighbouring residents and the environment. This report is available for viewing online at http://www.littlecreeksolar.com.

Canadian Solar Solutions Inc.

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Throughout the REA process, Canadian Solar is committed to ongoing consultation. If you have any questions or concerns about the project or the attached notice, please do not hesitate to contact me.

Best Regards,

Grace Pasceri, Permitting Manager
Canadian Solar Solutions Inc.
545 Speedvale Avenue West
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Grace.Pasceri@canadiansolar.com

Attachment: Notice of REA Amendment

NOTICE OF A PROPOSED CHANGE TO AN APPROVED RENEWABLE ENERGY PROJECT (REA No. 3068-93AP8E)

For Little Creek Solar Project
By Canadian Solar Solutions Inc.

Project Name: Little Creek Solar Project
OPA Reference Number: RESOP Contract Number 12970
Project Location: Part of Lots 14 and 15, Concessions 4 and 5 in the Town of Greater Napanee, Ontario.
Dated at the Town of Greater Napanee this 4 day of November, 2013

2243913 Ontario Corporation was issued a Renewable Energy Approval on January 25, 2013 in respect of the Little Creek Solar Project. Information with respect to the decision on this project can be viewed on the Environmental Registry by searching 011-6840.

2243913 Ontario Corporation, as a general partner for and on behalf of Little Creek LP (a subsidiary of Canadian Solar Solutions Inc.) is proposing to make a change to the project and the project itself is subject to the provisions of the *Environmental Protection Act (Act)* Part V.0.1 and Ontario Regulation 359/09 (Regulation). This notice must be distributed in accordance with section 32.2 of the Regulation. This notice is being distributed to make the public aware of a **proposed chance to the project**.

Project Description and Proposed Changes:
Pursuant to the Act and Regulation, the project in respect of which the Renewable Energy Approval was issued, is a Class 3 Solar Facility. An application has been made to the Ministry of the Environment to **change the project** and alter the terms and conditions of the existing Renewable Energy Approval. The proposed changes consist of minor technical changes to the preliminary design, including a reduction of the area inside the perimeter fence, a reduction in the nameplate capacity from 10 MW AC to 8.5 MW AC, an adjustment to the panel module mix (with fewer total modules to be installed), reconfiguration of internal access roads, change to the substation model, and a change to the inverter station model and location.

If approved with these changes, the facility would have a total nameplate capacity of 8.5 MW. The project location, taking the change into account, is described in the map below.

Documents for Public Inspection:
Little Creek LP has been required to update the supporting documents that are required to form part of the application or which must be otherwise submitted to the Ministry of the Environment available to the public (entitled *Modifications Document for the Little Creek Solar Project*). Written copies of the draft supporting documents will be made available for public inspection on November 4, 2013 on the project website at www.littlecreeksolar.com.

Project Contacts and Information:
To learn more about the project proposal or to communicate concerns, please contact:

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